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Complete Guide to Prevention and Cure of Disease

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Care of the Teeth, Occupational Diseases, Garden Plant Remedies,
Practical Eugenics, Schools of Medicine, Beauty Culture,
Physical Culture, Influence of Recreational Sports Upon
the Health, the Science of Breathing and
the Dictionary of Drugs

FULLY ILLUSTRATED WITH HALF TONE
AND COLORED PLATES

VOLUME FOUR

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Book XIII

MEDICAL MATERIALS; THEIR PROPERTIES AND USES

PART I.

INORGANIC (MINERAL) MATERIALS.

Importance of Drugs.—Drugs have to-day a very wide and important claim to our attention from the fact of their wide application. Those in more common use should be understood by the laity, while a knowledge of the rarer drugs should be close at hand, should we wish to learn of them. Drugs are our friends, but, like friends, must be properly and carefully used; in cases where not so used they prove a detriment rather than a benefit.

All Nature Assists.—For purposes of healing nature gives her vital forces in the form of plants and animals. Those forms of nature without life lend their aid, and thus some very important remedies come from the mineral kingdom.

Divisions of the Subject.—Our subject is therefore divided into parts, depending upon the source. Part I deals with drugs from the inorganic kingdom; Part II treats of drugs derived from the organic kingdom. The application of the drugs shall be given. Formulæ are not given, but such as are in common use will be found carefully and fully written under "Medicinal Prescriptions," "Home Administration of Medicines," and elsewhere.

The first in alphabetical order of the INORGANIC MATERIALS is:

ALUM (Alumen).

Definition.—A double sulphate of potassium and aluminium.

Property.—It may cause vomiting. Locally it checks bleeding.

Use.—It acts as a styptic, astringent and emetic.

Manner of Using.—As an emetic a teaspoonful is the dose for a child and a tablespoonful for an adult, and it should be given in syrup. A lotion of alum and alcohol is very useful in the prevention of bed-sores.

AMMONIUM (Ammonium).

Definition.—The salts are derived from the gas, ammonia.

Property.—It stimulates the heart. Weak solutions excite the flow of gastric juice. It is an antagonist to acids.

Use.—It may be used in cases of fainting or in cases of heart failure. Weak solutions are used as a sub-acid.

Manner of Using.—The aromatic spirits may be used in water, a teaspoonful as a dose. It should be remembered that this affords but temporary relief. Locally the liniment is useful.

ARSENIC (Acidum Arsenosum).

Definition.—Occurs as a white powder or in dense masses of crystals.

Property.—It serves as a stimulant to the nervous system, and in small doses improves the appetite and digestion.

Use.—Its properties indicate its use. Its stimulant effect upon the nervous system is made use of in the treatment of St. Vitus' dance. Preparations are used locally.

Manner of Using.—The common form used internally is called Fowler's solution, which is used in doses as high as ten drops. For local use a concentrated preparation is employed. In all cases arsenic is to be used with extreme caution, as it is very apt to produce symptoms of poisoning.

BISMUTH (Bismuthi Subnitras).

Definition.—A heavy white powder.

Property.—It has a soothing influence on the gastro-intestinal or digestive tract. Locally applied it is sedative and exsiccant; that is to say, it dries up excretions.

Use.—In cases of diarrhœa large doses are employed for the astringent effect. Locally it is employed in the treatment of burns and in skin diseases, where there is secretion to dry up.

Manner of Using.—It may be taken as a powder or in mucilage of acacia.

BORIC ACID (Acidum Boricum).

Definition.—It appears as colorless, transparent six-sided plates.

Property.—The influence of boric acid is sedative and destructive to low forms of organized life.

Use.—As a sedative and antiseptic.

Manner of Using.—Internally it is given in the form of a powder. For external application a lotion is prepared by dissolving the acid in water.

CALCIUM (Calcium).

Definition.—A metallic substance, the oxide of which constitutes lime. Chalk is scientifically called the carbonate of calcium.

Property.—Some preparations are sedative, others are sedative and astringent. Lime water and chalk are astringent and alkaline.

Use.—Either freshly slacked lime or, better, chlorinated lime may be used as a disinfectant. Carron oil consists of linseed oil and lime water, and is useful in the treatment of burns. Prepared chalk on account of its soothing and astringent effects makes a very useful tooth powder.

Manner of Using.—For internal use lime may be given in the form of a syrup where its assimilation is desired. Lime water may be used as a spray, or may be taken internally. Added to milk it prevents curdling.

CHLORINE (Chlorum).

Definition.—A gaseous element of a greenish color and strong suffocating odor.

Property.—Chlorine has the property of destroying the various forms of bacteria.

Use.—Chlorine is generated in the sick room and used in its free state as a disinfectant. For commodes, for bed-pans, or for internal administration a solution of chlorinated soda is employed.

Manner of Using.—Chlorine is to-day but little used internally, its principal use being external, and depending upon its power to kill germs.

COPPER (Cuprum).

Definition.—A metallic substance used to a slight extent in medicine, more widely in the arts.

Property.—Copper is astringent and caustic.

Use.—Its use is dependent upon its properties, it being an astringent and caustic. Copper is sometimes added to pickles to make them of a bright green color. This fraud can be detected by placing a piece of steel or the blade of a knife in the liquor; if it contains copper there will be a deposit of metallic copper upon the steel in a few minutes. The amount of copper present would not be sufficient to cause symptoms of poisoning. A far more dangerous source is the pigment found in wallpaper made of copper arsenite, which is very poisonous. This imparts to the wallpaper its green color.

Manner of Using.—Copper should always be used with caution, and never without the advice or direction of a physician. When used internally a salt known as the sulphate is used. Externally its caustic action is effected.

GOLD (Aurum).

Definition.—A well-known precious metal. On account of its high place among the metals gold was supposed to have some special value in medicine. As a matter of fact it is but little employed.

Property.—Its chief property is to stimulate the glands of the stomach and liver. It acts also upon the kidneys, increasing the flow of urine.

Use.—It is used for its general stimulary effect on the system and for its stimulant effect on the liver and stomach in particular.

Manner of Using.—The preparation used is an orange-colored powder made of equal parts of sodium chloride or common table salt and gold chloride. The dose for internal administration is minute.

HYDROCHLORIC ACID (Acidum Hydrochloricum).

Definition.—A metallic acid sometimes called muriatic acid or spirit of salt.

Property.—Dilute hydrochloric acid excites or stimulates the flow of secretions of the digestive tract and thus promotes appetite and digestion.

Use.—In dyspepsia due to insufficient amount of hydrochloric acid, the dilute acid is of value.

Manner of Using.—The dilute acid is used in drop doses freely diluted with water.

IRON (Ferrum).

Definition.—The most useful, widely distributed and abundant of all the metals.

Property.—Being a normal or natural element of the blood, iron and its preparations have the property of building up the blood and tissue wornout by disease. Iron has also a tonic effect on the nerves.

Use.—In cases of anemia or lack of blood the various preparations of iron are employed to replace the loss. In convalescence from disease iron is of distinct value when given in small doses over a long period.

Manner of Using.—Locally the tincture of the chloride is astringent. Care must be taken whenever iron or its preparations are used locally about the throat or taken internally in liquid form that they do not come in contact with the teeth. Internally iron may be given in pill form or as a solution.

MAGNESIA.

Definition.—A metallic substance, four preparations of which are used generally in medicine.

Property.—Magnesia being an alkaline substance is antagonistic to acids. It is also laxative.

Use.—The laxative property is marked in the oxide of magnesia and in the sulphate of magnesia or epsom salt. The citrate is laxative. The oxide is a useful antacid.

Manner of Using.—The sulphate or epsom salt is readily soluble in water. A teaspoonful is sufficient for most people as a purgative, though a tablespoonful would do no harm. Magnesia can be used in doses as high as a teaspoonful to two teaspoonfuls for an adult. For young children the dose is ten to twenty grains. The citrate of magnesium is a pleasant purgative in liquor form.

MANGANESE (Manganum).

Definition.—A metallic substance, two preparations of which, the dioxide and the sulphate, are used in medicine.

Use.—Manganese is used in the same cases as iron.

MERCURY (Hydrargyrum).

Definition.—A heavy fluid, with a silvery lustre and free from odor or taste.

Property.—Mercury in small quantities acts as a tonic, improving the condition of the blood. It is sometimes called an alterative from the fact that it alters or changes the state of the system.

Use.—Its use is that of a tonic, but should always be used advisedly. The preparation called corrosive sublimate, which is the bichloride of mercury, has no equal as an antiseptic. Calomel and blue mass are valuable as laxatives.

Under the name quicksilver we recognize the mercury used in the arts, as to manufacture thermometers and mirrors.

Manner of Using.—Corrosive sublimate should be used only externally without a physician and with great caution, as it is very poisonous. Blue mass pill may be given as high as five grains. Calomel is best taken in small amounts, but this, too, should be used with caution.

NITRIC ACID (Acidum Nitricum).

Definition.—One of the metallic acids occurring as a colorless, fuming liquid.

Property.—Locally the application of nitric acid is followed by destruction of tissue. Taken internally it is an astringent.

Use.—The local effects are made use of in the employment of the acid as an escharotic. Internally it is used where astringent results are desired, as in diarrhœa.

Manner of Using.—The strong acid is used locally, but for internal use only small quantities are used and very well diluted.

OXYGEN (Oxygen).

Definition.—A gaseous element forming one-fifth of the atmosphere.

Use.—Being a vital part of the air we breathe it is used in diseases of the heart and lungs associated with great difficulty in breathing.

Manner of Using.—It is usually kept in tight cylinders ready for use. It is used by inhalation.

PHOSPHORUS (Phosphorus).

Definition.—A yellow wax-like substance obtained from bones. It has the odor of garlic.

Property.—Phosphorus acts upon the nervous system and upon the bones.

Use.—In disease of the bones, dependent upon defective nutrition, phosphorus is of great value. In those nervous diseases dependent upon nerve exhaustion, rather than organic disease, phosphorus is employed with benefit.

Manner of Using.—Phosphorus is given in the form of pills or as a liquid preparation. Poisonous effects quickly follow an over-dose.

SILVER (Argentum).

Definition.—Another of the precious metals. It is much more extensively used than the metal with which it is so often associated.

Property.—The preparation of silver that is most often used and the only one to be considered in this work is the nitrate of silver, or, as it is called, lunar caustic.

Locally and internally lunar caustic is astringent in its properties. The mark made externally is white, but this subsequently becomes black on exposure to light. Solutions of this substance behave in the same manner.

Use.—Locally the astringent or even caustic property of the drug are made use of in the destruction of exuberant granulations forming what is commonly called proud flesh. A solution of thirty grains to a pint of water painted on the finger will absorb a felon. Internally also the drug is used for its astringent action on the gastro-intestinal tract.

Manner of Using.—Internally minute doses are used. For external applications solutions are employed and are made of varying strength, depending upon the particular need.

SODIUM (Sodium).

Definition.—This element is not used by itself in medicine, but certain of its salts are well known and widely employed.

Property.—Sodium hydrate or caustic soda, as its name implies, is a caustic. Bicarbonate of soda is a sedative when used externally. Internally it is antagonistic to acids, hence is said to be antacid. Borax or sodium-borate is used internally, but is liable to disturb the stomach. It is sedative in its action. Sodium chloride or table salt is an important part of our food. Sodium phosphate is mildly purgative in its action. Sodium sulphate or Glauber's salt is a powerful purgative.

Use.—Bicarbonate of soda is much used in dyspepsia. When given a few hours before meals it stimulates the flow of gastric juice. When given an hour or so after meals it serves to neutralize fatty acids which are products of faulty digestion. Sodium chloride in solution is much used to-day injected in the bowel or under the skin.

Manner of Using.—All the salts are soluble and should be taken internally in solution, in doses to meet the requirements of each case.

SULPHUR (Sulphur).

Definition.—A lemon yellow-colored substance, brittle, tasteless and without odor. It is found native in Sicily and Iceland in the neighborhood of extinct volcanoes.

Property.—Locally applied, sulphur is a stimulant to the skin and a parasiticide. Internally its acts favorably, so changing the nutrition of the person that it is called an alterative. This drug has long been famed as a medicine needed by the young in the spring time.

Use.—The preparation known as compound licorice powder is a mild laxative. In cases of disordered nutrition sulphur oftentimes acts most favorably. The fact that sulphur is absorbed into the blood from the small intestine is shown by the effect upon silver coins or jewelry work by persons taking it. The effect or results is a beneficial one upon the blood, hence in cases where the blood is deranged or below par, sulphur is useful.

Manner of Using.—Internally sulphur is taken in solution. It may be taken in syrup or molasses. Externally it is best applied in ointment.

SULPHURIC ACID (Acidum Sulphuricum).

Definition.—A heavy oily liquid without odor, but with a strongly acid taste. It is sometimes called oil of vitriol.

Property.—Sulphuric acid is astringent and antiseptic when taken internally. Locally its acts as an escharotic.

Use.—Its properties indicate its use. It is an escharotic, internal antiseptic, astringent and tonic.

Manner of Using.—Sulphuric acid should be used well diluted and always advisedly taken.

PART II OF BOOK XIII

Treats of the Organic (Vegetable) Materials used in medicine. Superb colored illustrations of eighty-four plants, fruits and vegetables are also to be found in this chapter.

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MEDICAL MATERIALS

PART II.

ORGANIC (VEGETABLE) MATERIALS

The materials of this group are far more numerous than those of the preceding group. They will be found arranged according to their common names, the scientific names in most cases being given.

ACETANILID (Acetanilidum).

Definition.—A white, crystalline substance, made from acetic acid.

Property.—It is sedative to the nervous system; causes a lowering of the temperature associated with free sweating.

Use.—It is employed in the treatment of spasms, for the relief of headache and to reduce temperature in mild cases of fever.

Manner of Using.—May be used as the powder or in the form of a tablet or capsule, five grains being the usual dose.

ACETIC ACID (Acidum Aceticum).

Definition.—A colorless liquid with a vinegar-like odor.

Property.—It checks hemorrhage locally, also has a soothing local effect. Taken internally it produces a cooling sensation.

Use.—It is useful as an antagonist to scurvy, as a refrigerant in mild cases of fever and locally for its soothing properties in sunburn. It acts also as a styptic.

Manner of Using.—The dilute acid is the safe preparation and may be used in amounts from one to two teaspoonfuls.

ACONITE, MONKSHOOD (Aconitum).

Definition.—Aconite is the root of a plant growing in Europe. The root is conical in shape, two or three inches long, and closely resembles horseradish. When slowly chewed it produces a sensation of warmth, slowly followed by numbness.

Use.—Aconite is sedative in its effects, and in accordance with this property it is employed locally in neuralgia. It is used also in cases of vomiting. Its principal action is upon the circulation, its effect being to slow the pulse.

Manner of Using.—The tincture of aconite is the preparation usually taken internally. The dose is very small, and even then poisonous symptoms are prone to develop.

AGUE ROOT (Aletris Farinosa).

(*See Plate I.*)

Height, from a foot to eighteen inches; leaves, pale and smooth; bears white flowers; grows mostly in sandy soils. It has proved useful in dyspepsia and flatulent colic, and is especially useful for the purpose of restoring the activity of the generative organs, giving them vigor and healthy action. A valuable agent to prevent tendency to miscarriage and falling of the womb. The dose of the tincture is from six to ten drops three times a day, or can be used in pill form.

ALCOHOL, SPIRIT OF WINE.

Definition.—Alcohol is a transparent, colorless liquid obtained from the distillation of fermented saccharine material. For use in medicine, whiskey should be at least two years old and wine at least four years old. Wine is made by fermentation without distillation. Red wine differs from white wine in that in the production of the former the skins of the grape are used. Malt liquors—ale, beer, porter, are produced by fermentation of malt and hops and contain nutritive material.

Use.—When taken internally in small amounts and at meal-time the effect of alcohol is to stimulate the glands of the stomach to greater secretion. The presence of alcohol in the stomach, however, retards digestion, so that if much be taken it is a detriment rather than an advantage.

As a result of the long-continued use of alcohol, changes take place in the coats of the stomach. The inner lining of the stomach loses its delicacy and becomes thickened. It can no longer secrete as formerly, and indigestion results. Upon the heart and circulation alcohol is a decided stimulant. It strengthens the heart, it enlarges or dilates the blood-vessels and hence the flushed face of the one addicted to alcohol. Alcohol by its stimulant action enables the system to pass through great strains, but if its use is prolonged beyond the period of actual need it is followed by its harmful effects. These latter manifest themselves by changes in the stomach, liver and kidneys and blood vessels, and consist essentially of a hardening of these organs, rendering their functions imperfect. Alcohol does not increase the heat of the body, as some suppose. By actual experiment it is found that by dilatation of the capillaries it leads to a loss of heat. It is found, for instance, that those explorers in the Arctic region who avoid alcohol can better endure the trial of these regions than those who indulge.

ALLSPICE (Pimenta).

Definition.—Allspice represents a fruit.

Use.—It is employed chiefly to promote appetite and digestion. It may be used to disguise the taste of unpalatable drugs and is one of the ingredients of spice plasters.

Manner of Using.—Internally, the oil is the preparation used in drop doses.

ALMOND (Amygdala).

Definition.—There are two varieties of almond—the bitter almond and the sweet almond.

Use.—There are two oils of almond, one, the oil of bitter almond, is used in minute doses; the other, known as the expressed oil of almond, may be used in large doses, *i. e.,* as high as a tablespoonful. It is quite important that these two oils should not be confused. Expressed oil of almond and mixture of almond are bland and soothing for local application.

Manner of Using.—Locally or internally, as already indicated.

ALOES (Aloe).

Use.—The dry juice is medicinal and one of the best laxatives for promoting and righting the action of the colon or large intestine. It excites the circulation of the blood in the organs of the pelvis, and is invaluable in promoting the menstrual flow—in this case it is generally combined with iron and myrrh. It is used for chronic costiveness, but those that suffer from piles should not take it. By reason of its tendency to increase the menstrual flow it ought not to be used during menstruation, especially by those having naturally an abundant flow. It should be avoided during the period of pregnancy. The dose is from two to five grains, generally in pills, combined with other drugs.

AMERICAN SARSAPARILLA

(*Smilax Officinalis, Ginseng Family*).

Common Name.—Small Spikenard.

Definition.—The root is used. It grows in the West Indies. The American plant, *Smilax Sarsaparilla,* growing in the South, commonly called Bamboo Brier, has qualities equal if not superior to the commercial sarsaparilla. It is an alterative for the whole system.

Use.—It is useful in syphilitic and chronic skin diseases, rheumatic troubles, dropsy and as an adjuvant with other alteratives. Dose: One teaspoonful of the root to a cup of boiling water; drink cold, one or two cupfuls a day, a large mouthful at a time. Tincture, one-half to one fluid drachm in the same amount of water.

ANISE (Anisum).

The virtues of this drug depend upon the warming effect when taken into the stomach. As it has a pleasant odor and taste, it is much used in cases of colic in young children.

ARNICA, LEOPARD'S BANE (Arnica).

Definition.—The preparations of arnica are obtained from arnica flowers and arnica root. The flowers are orange-yellow, dish-shaped, with rays.

Use.—Arnica is used in domestic practice, but very little by physicians. The tincture is usually employed in cases of spasms, bruises and for rheumatic pains. Taken internally, in small doses, it produces a sensation of warmth over the body and increases the secretions.

ASAFETIDA (Asafoetida).

Use.—The dry juice of this plant is a powerful stimulant in many nervous affections, particularly in women. Its most frequent use is in the treatment of hysteria. The ordinary dose is from two to five grains. From fifteen to twenty drops of the tincture may be given as a dose.

BALSAM APPLE (Momordica Balsamina).

Part used—fruit and seeds.

A liniment formed by infusing the fruit in olive oil is applied to burns, old sores, piles, prolapsus ani, and so forth, and the fruit itself is mashed and used in the form of poultices. An extract prepared from it is useful in dropsy in the dose of from 5 to 15 grains.

BEAN.

Those who have tried the white navy bean as a cure for erysipelas say it furnishes a sure cure if the disease is taken in time. The beans should be boiled soft and applied as a poultice to the affected parts. Renew frequently.

BEET (Beta Vulgaris).

Whenever tried the juice of the common beet has been found a remedy for gravel. Boil the beets till thoroughly done. Remove the beets and boil the juicy water again till it assumes the form of a syrup. Take a cupful three or four times a day. Pursue the treatment till the stones pass.

BENZINE (Benzinum).

Definition.—Benzine represents a purified distillate from American petroleum. It is a clear, colorless, diffusible liquid. Its vapors, when mixed with the air, are explosive; hence it should be kept in a cool place remote from light or flame.

Use.—Benzine is not used internally in medicine. Externally benzine is used as a counter-irritant. It may be applied by rubbing, or upon a flannel cloth.

BENZOIN (Benzoinum).

Definition.—Benzoin is a gum resin obtained by incisions made into the bark of a tree growing in the East Indies. It occurs in large masses.

Use.—The medicinal preparation of opium known as paregoric contains some benzoin. The tincture of benzoin is useful as an expectorant. The compound tincture is useful for local application as a protectant to excoriated surfaces. Benzoin prevents fat from becoming rancid.

BITTER ASH (Bittera Febrifuga).

A tree indigenous to the West Indies. The bark is the part used. A decoction is made with one ounce to a pint. Dose: A tablespoonful four times a day. Has been found most useful in intermittent fever, for which it is claimed to be almost a specific.

BLACK MUSTARD (Sinapis Nigra).

(*See Plate V.*)

BLACK SNAKEROOT (Cimicifuga).

Definition.—Cimicifuga represents the rootlets of the plant.

Use.—Upon the nervous system it acts as a sedative. It is claimed that it is of value in rheumatic affections of the muscles.

Manner of Using.—A preparation known as the fluid extract is usually employed and taken in small and repeated doses. A tea of the root, drunk freely, is used in rheumatic affections.

BONESET.

This plant is indigenous of and is found in most parts of North America. The tops and leaves are medicinal. They should be made into an infusion which is generally known as boneset tea. It is a tonic, diaphoretic, expectorant, and when taken in large doses or warm it acts as an emetic and aperient. The extracts of boneset may be purchased at drug stores. The fluid dose is from one to two drachms. With the solid extract the dose is from one to one and one-half ounces and that of the infusion from one to two ounces.

Two scruples of eupatorin (boneset), one scruple of xanthoxylin and one-third grain of strychnia mixed and made into twenty powders, one powder being taken three times a day, is recommended for torpor of the liver or kidneys and also for rheumatism.

BUCHU (Buchu).

Use.—This is one of the best known remedies to soothe the irritation of the urinary organs. It has been used for catarrh of the bladder and in cases of pain in urinating. Best results are obtained from the infusion made from one ounce of the leaves in two pints of boiling water. Two or three soup-spoonfuls four or five times a day. There is also an extract, which dose is from a half to one teaspoonful. Sugar can be added to make more palatable.

BURDOCK (Lappa Minor).

Root spindle-shaped, about a foot in length. Flowers purple and seeds quadrangular. The root is the part employed, and in venereal and cutaneous diseases supplants mercury, the iodides and arsenic, eliminating very rapidly the specific poison from the blood. Best administered in decoction by boiling two ounces of the root in three pints of water to two, and given in the dose of a tablespoonful four times a day.

CAFFEINE (Caffeina).

Definition.—Caffeine is prepared from the dried leaves of the thea sineusis or from the dried seeds of coffea arabica. It occurs also in other plants. It exists in the kola nut of Africa. Caffeine is in the form of colorless silky crystals.

Use.—Caffeine stimulates the nervous system. It quickens the intellect and causes sleeplessness. It causes an increase in the flow of the urine. It is used to stimulate the heart, to increase the flow of urine, and combined with other remedies it is of value in relieving headache of nervous origin.

Manner of Using.—The preparation used is known as citrated caffeine. It is given in powder form.

CALABAR BEAN (Physostigma).

Definition.—Physostigma is the seed of the physostigma venanosum, growing in Western Africa, along the River Niger.

Use.—The chief action of the drug is to depress the spinal cord, and in accordance with this action it is used to produce quietude in cases of convulsion, as from strychnine poison, from tetanus, and so forth.

CALAMUS, SWEET FLAG (Calamus).

Calamus is used as a substitute for tobacco by those habitual to the weed. It is a constituent of various bitters used to stimulate and promote the appetite.

CAMPHOR TREE.

The uses of camphor in medicine are numerous. It affords one of the safest and surest of household remedies for headache, spasms, neuralgia, gout, rheumatism and general debility. It is equally efficacious as an external remedy for pains, sprains, chilblains, bruises and flesh soreness. In such cases the tincture is generally used, and it can be made at home by mixing an ounce of the gum with a pint of pirits. It affords a speedy remedy for colds, in the form of a drink made of one pint of hot water into which ten drops of the spirits of camphor has been dropped. It should be sipped slowly and as hot as can be taken.

CARBOLIC ACID (Acidum Carbolicum).

Definition.—Carbolic acid is made from coal-tar. It occurs in the form of colorless crystals, but exposure quickly converts it into a colorless or slightly reddish liquid.

Property.—A slight fall in temperature follows the use of carbolic acid. Its chief action depends upon its property of destroying low forms of germ life.

Use.—By virtue of its properties it is used as an antiseptic and internally as an antiferment.

Manner of Using.—Two or three drops may be taken internally, best given with a powder of bismuth. Locally it is used in solutions of various strength, the usual being 5 per cent.

CARDAMON (Cardamon).

This drug represents a fruit. It is an agreeable vehicle for disguising the taste of other drugs, and it also produces a sensation of warmth in the stomach.

CASTOR OIL (Ricini Oleum).

Definition.—Castor oil is a fixed oil expressed from a seed. It is a pale yellow liquid, having a faint odor.

Use.—Castor oil is a slow purgative, producing copious liquid stools. It stimulates the bowels.

Manner of Using.—The dose for an adult is half to one ounce; for a child, one to two drachms.

CAYENNE PEPPER (Capsicum Annuum).

The stem is thick, smooth and branching, about three feet in height. The fruit is of a bright scarlet color and contains numerous kidney-shaped, whitish seeds. A powerful stimulant. Employed with great advantage in la grippe. Two tablespoonfuls of the powder, with a teaspoonful of common salt, infused for an hour in a pint of boiling water with half a pint of vinegar. This is strained and a teaspoonful given every hour. The same is useful as a gargle. In scarlet fever the same infusion diluted gives much relief and is of positive advantage. **Dose:** The same.

CELERY (Opium Graveoleus).

Various medicinal preparations of celery are used in the treatment of chronic rheumatism. The same result is reached by drinking freely

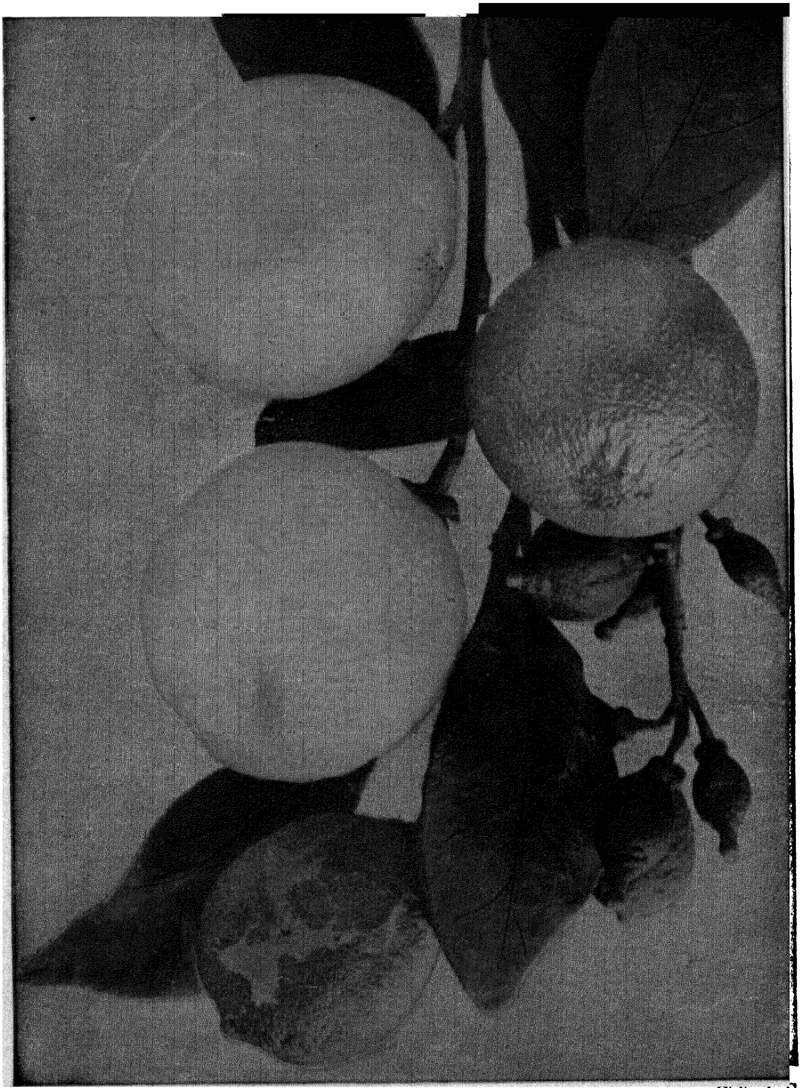
(*Continued on page* 1442.)

Fruits, Vegetables, Herbs, Roots

AND

Plants Valuable in Medicine

How to Prepare Them
Their Uses



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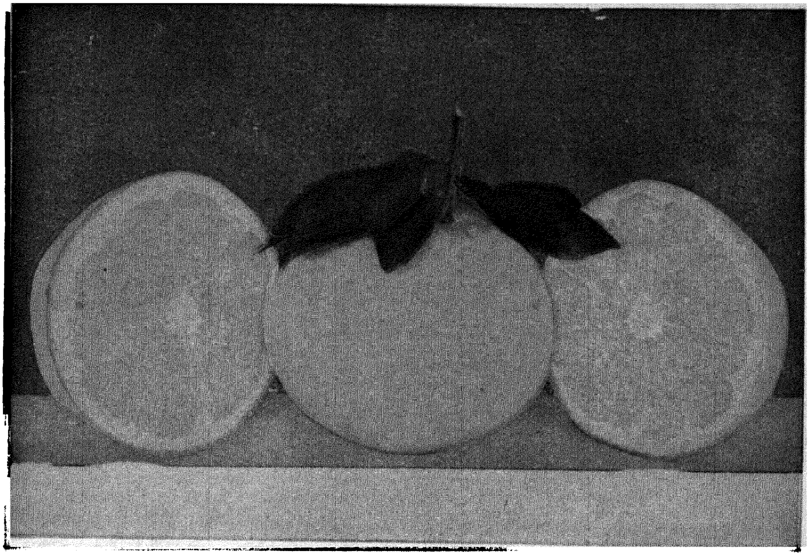
THE LEMON (*Citrus Limonum*).
Treatment for twenty-seven diseases. See page 1451.



GRAPE-FRUIT.

Mild astringent. Soothing to the stomach in cases of flatulence and dyspepsia.

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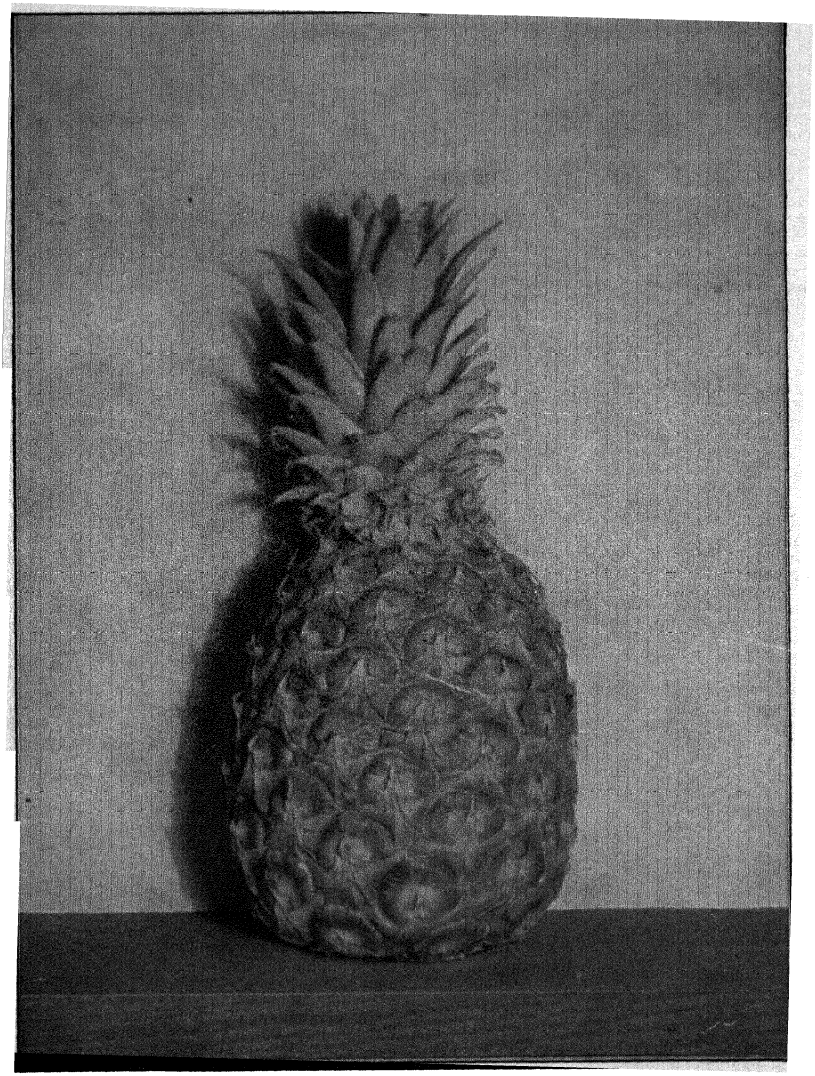
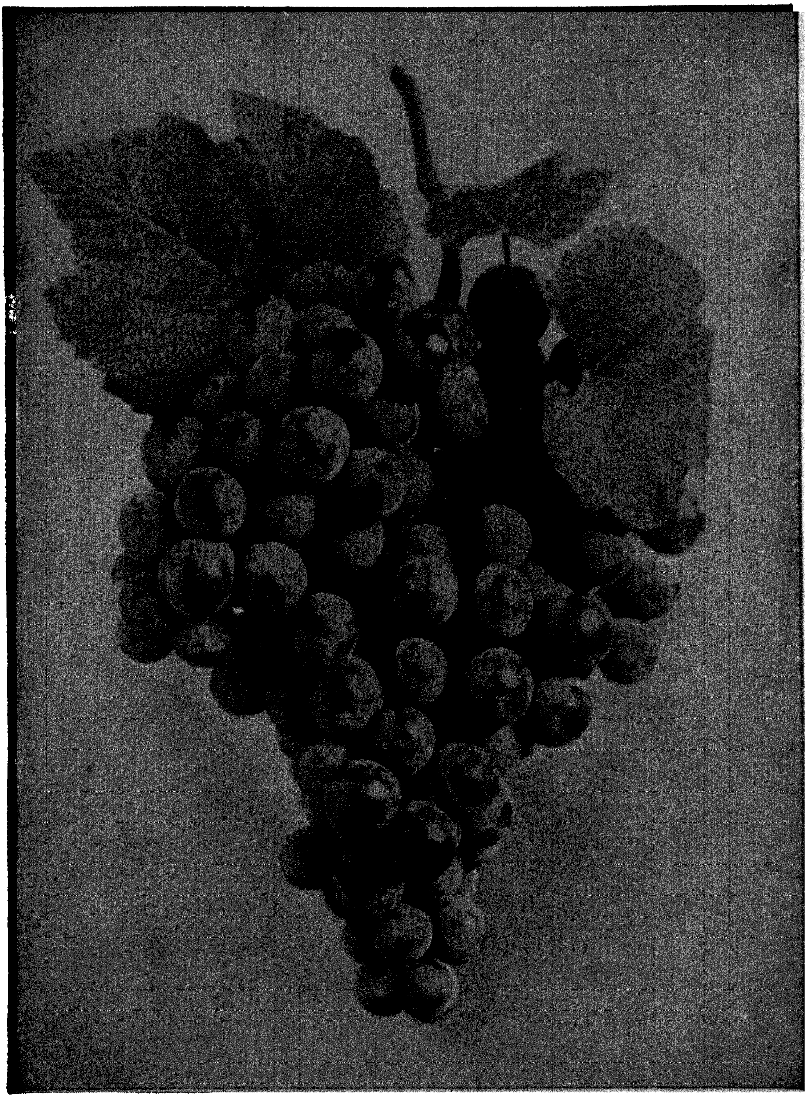
APPLE.

Gentle laxative. Eaten regularly, apples keep the stomach and bowels in good condition.



PINEAPPLE (*Ananassa Sativa*).

Besides being a delicious fruit, its juice can be expressed and used as a gargle for throat irritation and severe sore throat, and as a remedy for stomach disorders and gastric troubles. A teaspoonful of its juice may be taken every half hour until relieved.



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GRAPE VINE (*Vistis Vinifera*).

Used in dropsy and chronic dysentery. See page 1448.

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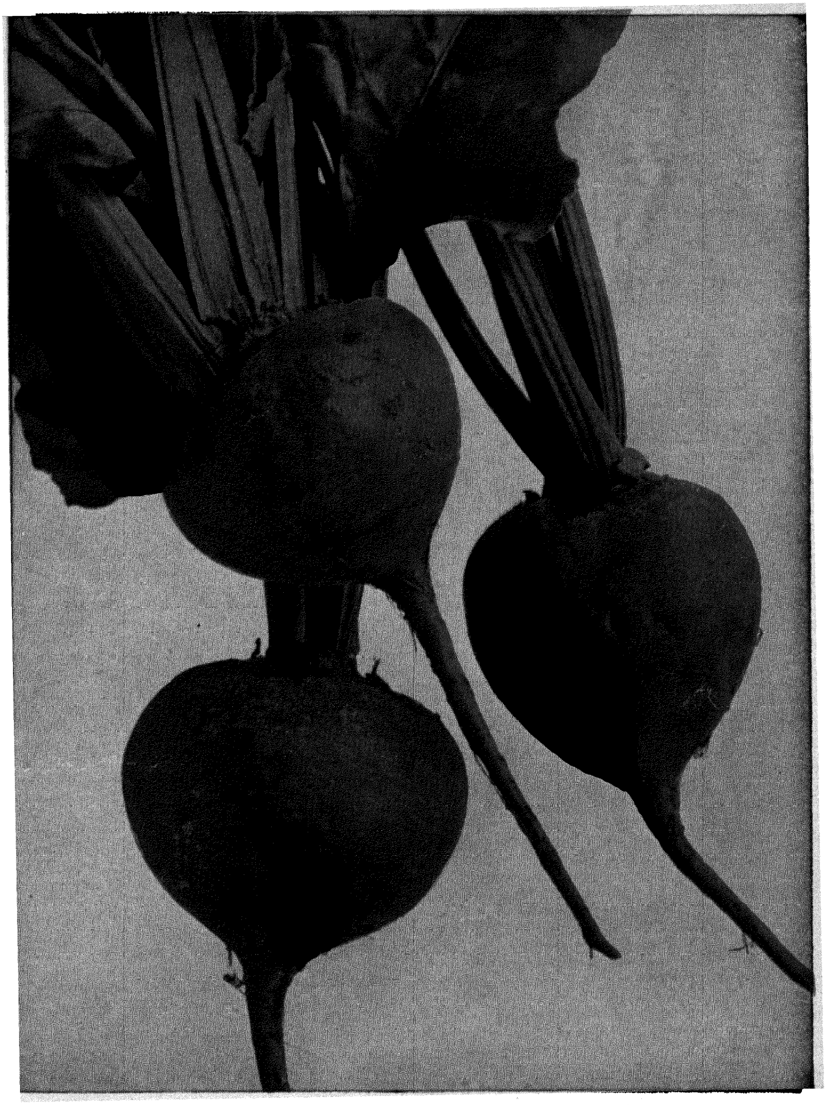
ASPARAGUS (*Asparagus Officinalis*).
Used for the kidneys. See page 1414.



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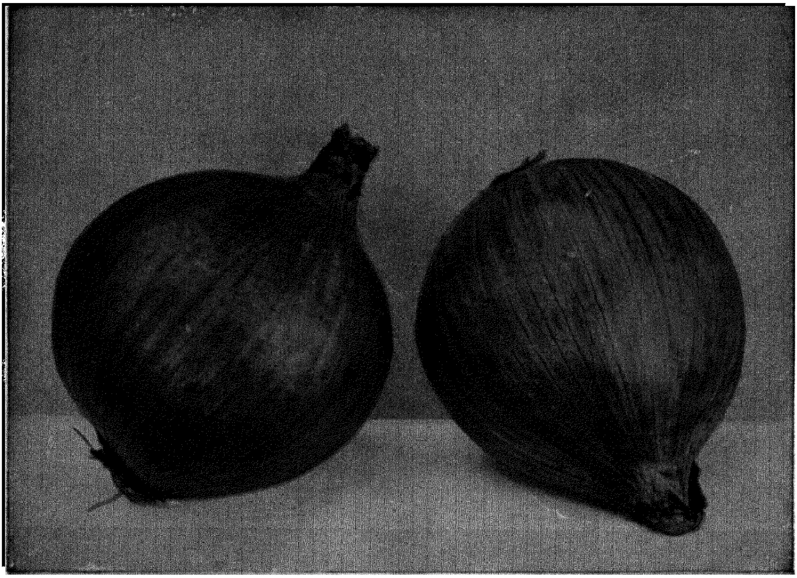
BEET (*Beta Vulgaris*).

Used in gravel. See page 1389.

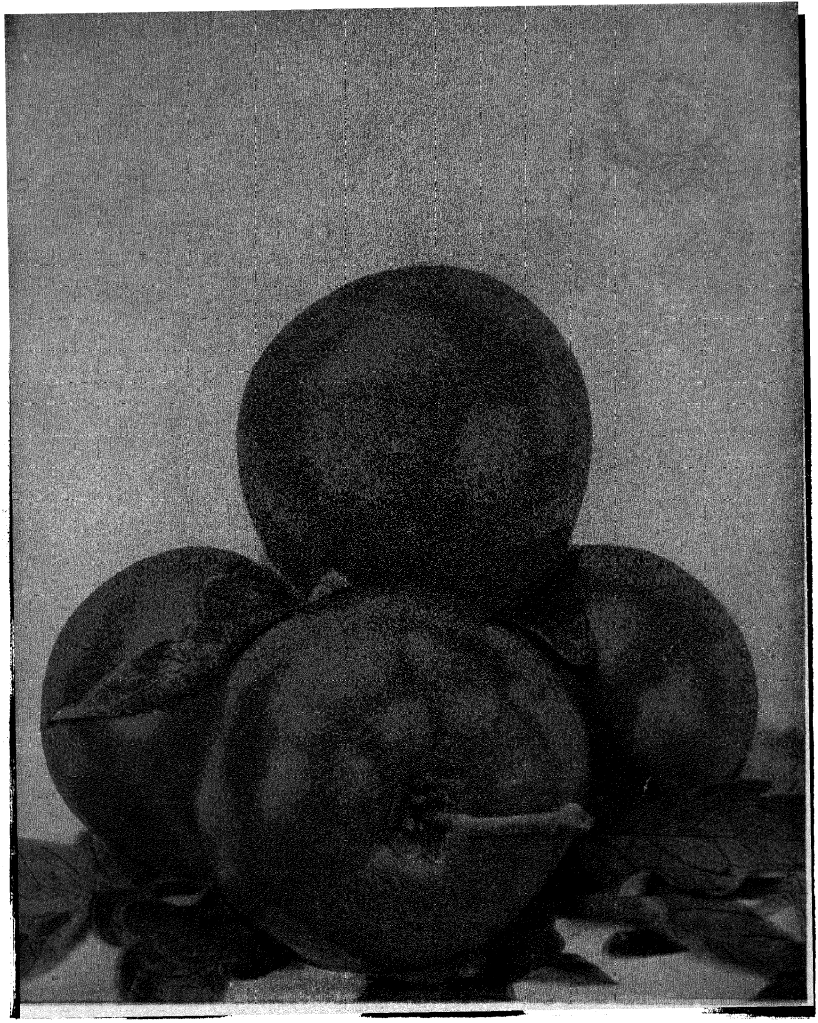


ONION (*Allium Cepa*).

Used in six diseases. See page 1458.

PUMPKIN (*Cucurbita Pepo*). ©E. J.

Treatment for worms, retention of urine and inflammation of bladder and bowels. See page 1462.



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TOMATO (*Lycopersicum Esculentum*).
Treatment for Cholera Infantum. See page 1469.

CELERY (*Opium Graveolus*).
Used in Chronic Rheumatism. See page 1392.

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RED PEPPER (*Capsicum*).

Used as a gargle in Scarlet Fever and as a tea in the Grippe. See page 1462.

MEDICINAL PLANTS

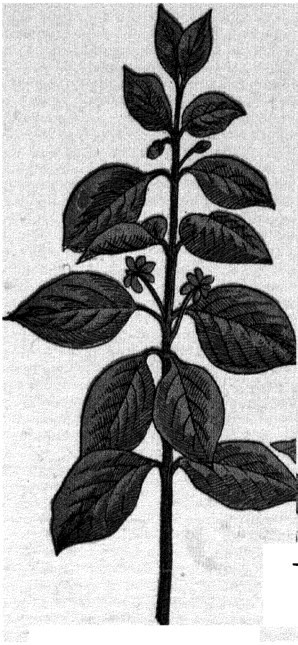
PLATE I.

Chittim Bark.—A shrub about seven or eight feet in height, with branches terminating in a sharp spine. The leaves, on short footstalks, ovate and veined. The bark is officinal and the part employed. It stands without an equal in the treatment of constipation in all its varied forms. An infusion of one ounce of the bark to a pint of boiling water; infuse for one hour and strain. Dose: One teaspoonful, morning and evening, according to symptoms or until the bowels are thoroughly regulated.

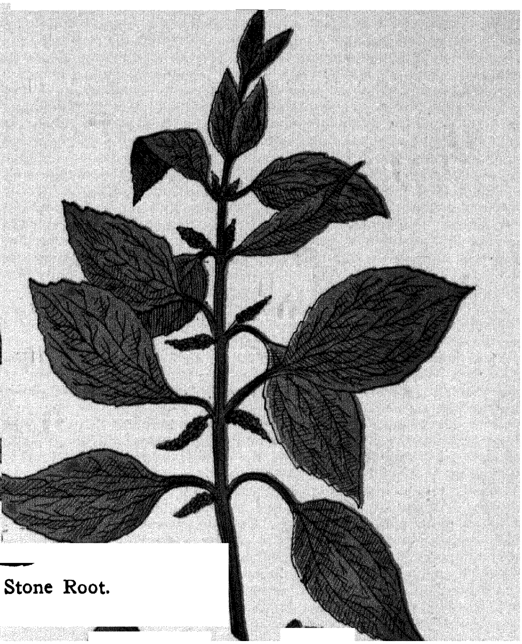
Stone Root.—This plant is used in numerous complaints in practice. A decoction of the fresh root, one ounce to the pint of water, has been used with advantage in hemorrhoids or piles, catarrh of the bladder, gravel and dropsy. The dose is one tablespoonful four times a day. The leaves are applied in the form of fomentation to wounds, bruises and sores, and in cases of internal abdominal pains.

Santal Wood.—White Sandalwood is a small tree indigenous to India. The volatile oil distilled from the wood is the part used. Given internally in moderate doses of 5 to 10 drops for gonorrhea. It is sometimes used as a stimulant to the respiratory tract in bronchitis and certain forms of asthma.

Ague Root.—Height, from a foot to eighteen inches; leaves, pale and smooth; grows mostly in sandy soils. It has proved useful in Dyspepsia and flatulent colic, and is especially useful for the purpose of restoring the activity of the generative organs, giving them vigor and healthy action. A valuable agent to prevent tendency to miscarriage and falling of the womb. The dose of the tincture is from six to ten drops three times a day, and of the powdered root five to eight grains.

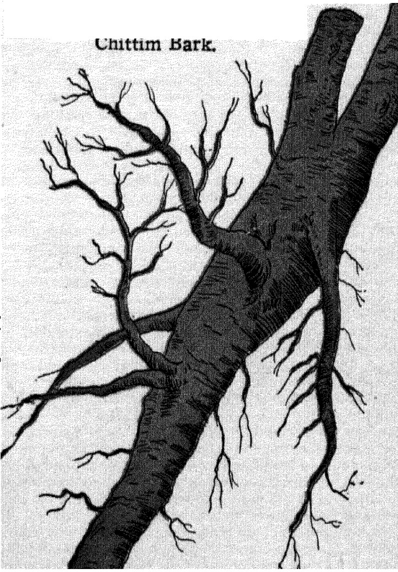


Chittim Bark.

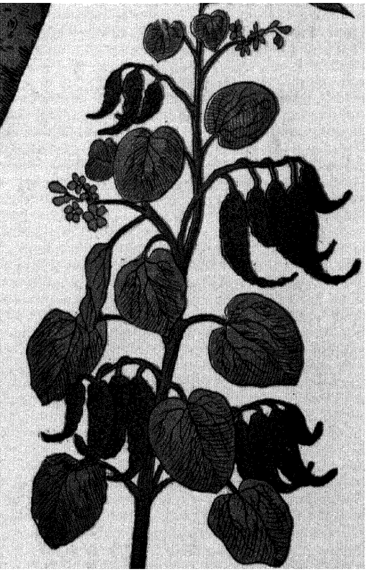


Stone Root.

Chittim Bark.



Sandal Wood.



Ague Root.

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PLATE I.

MEDICINAL PLANTS

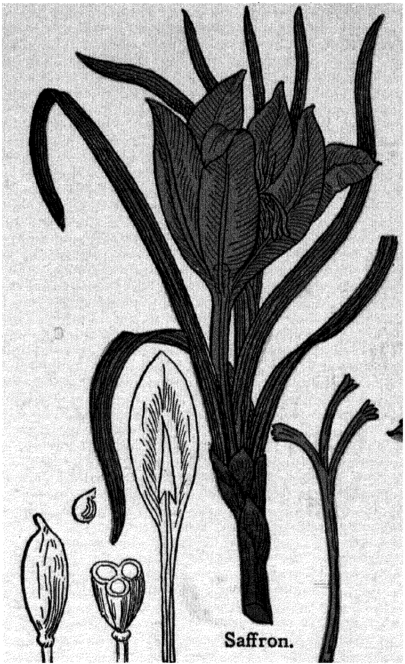
PLATE II.

Saffron.—This plant is common in orchards and of a deep orange color. It is used as an infusion (tea); boiling one ounce of leaves in two pints of water. It is a pleasant home remedy in the beginning of scarlet fever, measles and chicken-pox, serving to bring out the eruptions. Dose, from half to a whole wineglassful, three times a day. It is also good as a gargle in sore throat.

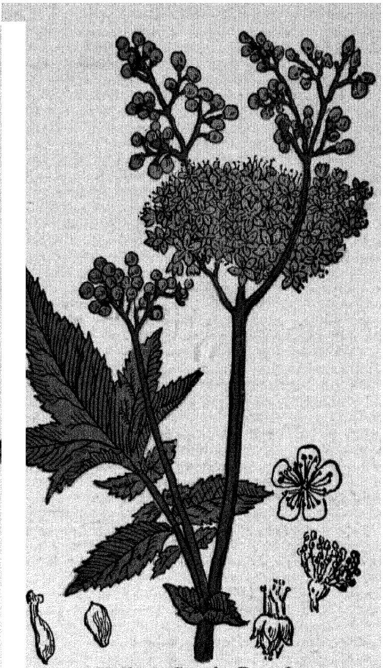
Yellow Goat's Beard.—A tea of the root, bark and leaves of this plant is used for diarrhœa in children. Boil one ounce of root in two pints of water. Take two or three tablespoonfuls three or four times a day.

Hedge Mustard.—Used cooked for table purposes as a stimulus to the stomach and to relieve coughing. Also used in the form of an infusion (tea) to cleanse ulcers and wounds. Boil an ounce of seeds, or a quantity of leaves, in a quart of water and wash the sore parts twice a day.

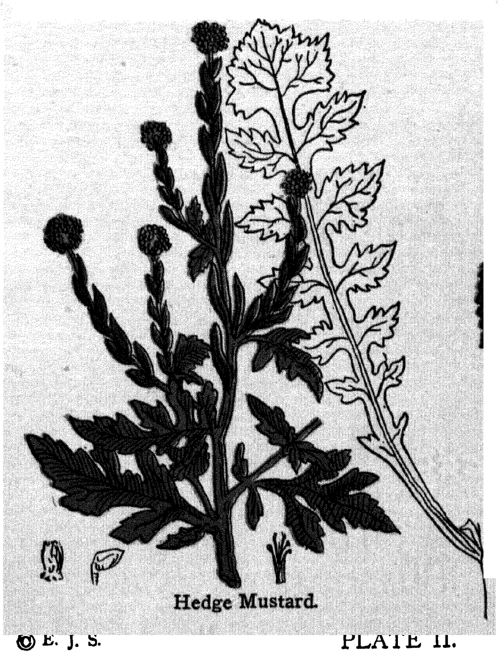
Common Hedge Nettle.—Made into a tea and drunk freely is excellent for hemorrhages of lungs and stomach. In doses of half a wineglassful four times a day it relieves neuralgia. A poultice of the leaves also relieves neuralgic pain and aids in the cure of wounds. Used at times as a tea, and drunk in wineglass doses twice a day, to promote menstruation and kill worms.



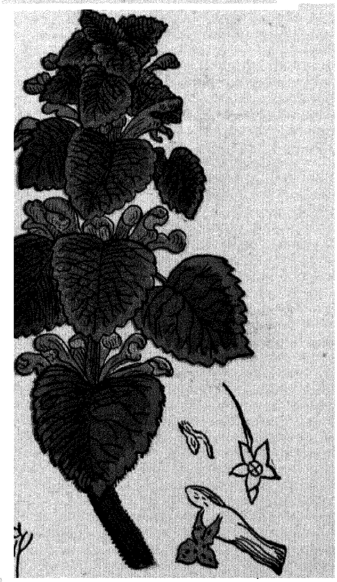
Saffron.



Yellow Goat's Beard.



Hedge Mustard.



Common Hedge Nettle.

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PLATE II.

MEDICINAL PLANTS

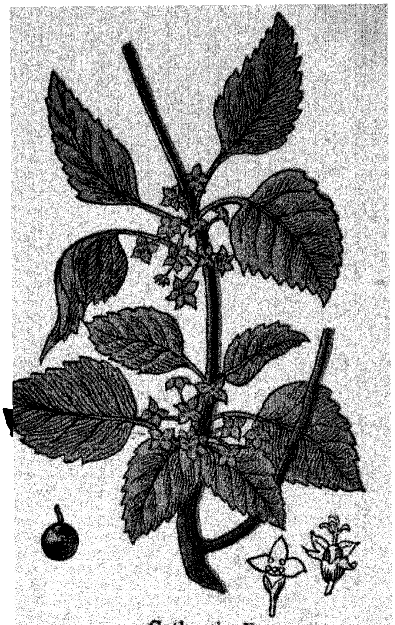
PLATE III.

Cathartic Ramno.—A tea of the bark, taken in tablespoonful doses, three times a day, opens the bowels. But caution is needed, lest it lead to purging.

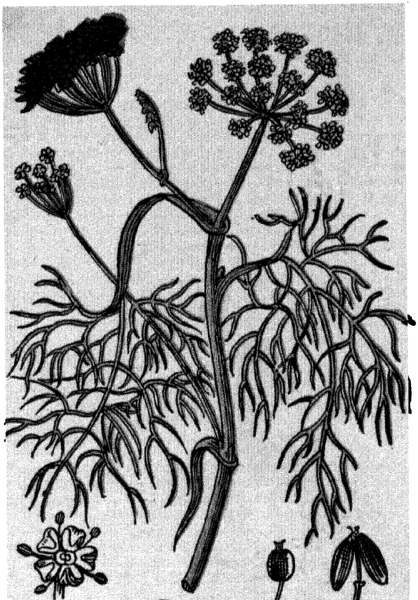
Fennel.—The seeds and leaves in the form of a strong infusion (tea) are excellent for colic. The seeds in form of a powder are also good for cramps. Dose of the tea, a wineglassful, repeated at half-hour intervals, if necessary. Dose of the powdered seeds, ten to twenty grains.

Tansy.—Tansy tea, in doses of a teacupful twice a day, promotes menstruation. In the form of bitters, it strengthens weakened constitutions. Cold tansy tea, drunk freely, is good for dyspepsia.

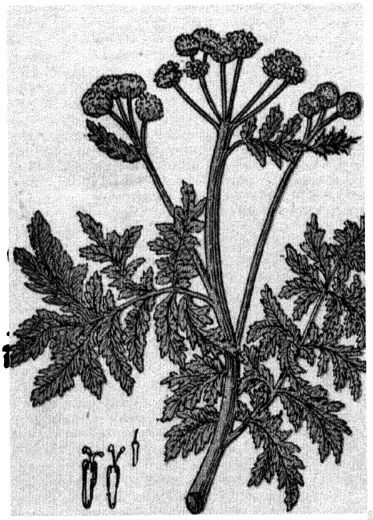
Wood Sorrel.—A poultice of the leaves was once a popular application in cases of cancer. Sorrel tea, drunk freely, also aids in giving relief to cancerous affections.



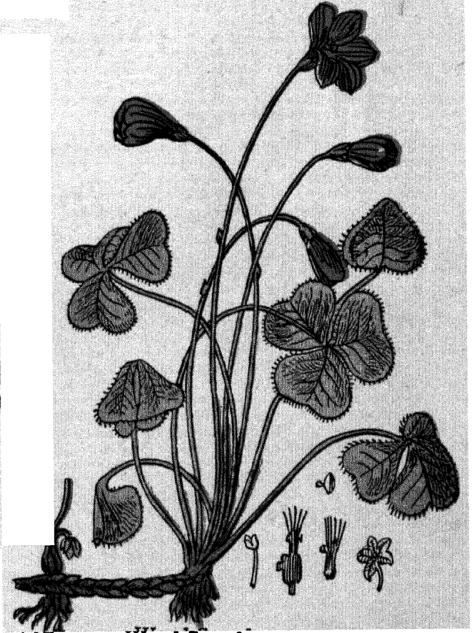
Cathartic Ramno.



Fennel.



Tansy.



Wood Sorrel.

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PLATE III.

MEDICINAL PLANTS

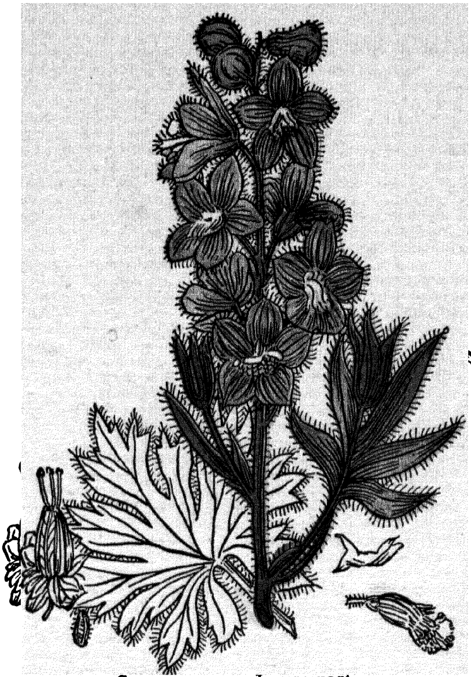
PLATE IV.

Stavesacre or Lousewort.—The crushed seeds, made in a paste and rubbed on the head, is an effective way to kill lice.

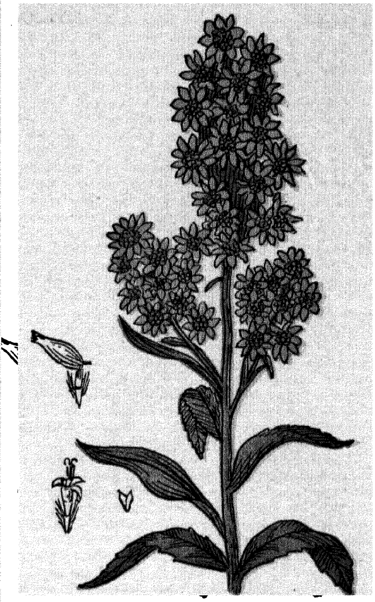
Golden Thistle.—A tea of one ounce of leaves or stems to two pints of water will relieve colic. Dose, a wineglassful, repeated every half-hour, if necessary.

Lime-Tree.—The juice of the lime, mixed with water, is a refreshing drink, in frequent sips, for fever sufferers. Lime juice in large quantities is carried on board ships as a preventive of scurvy.

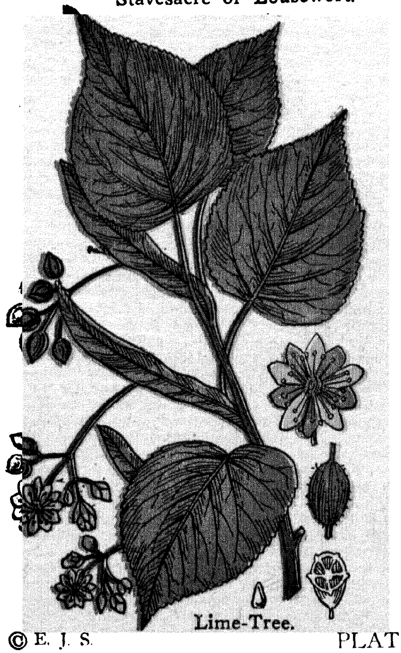
Red-Berried Trailing Arbutus.—A strong tea, made of one ounce of the leaves to a quart of water, and taken in doses of two tablespoonfuls three times a day, is used to relieve bladder trouble. It diminishes the irritation caused by the urine, and the inflammation and pain.



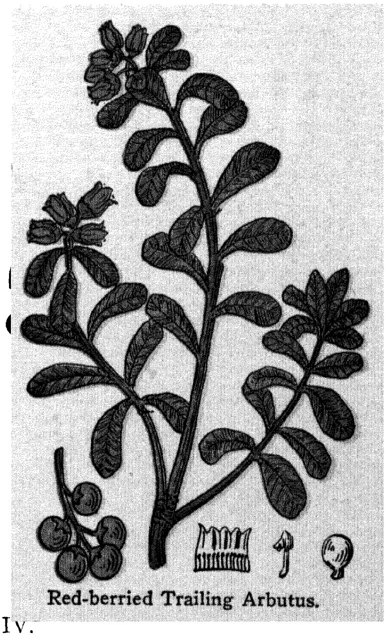
Stavesacre or Lousewort.



Golden Thistle.



Lime-Tree.



Red-berried Trailing Arbutus.

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PLATE IV.

MEDICINAL PLANTS

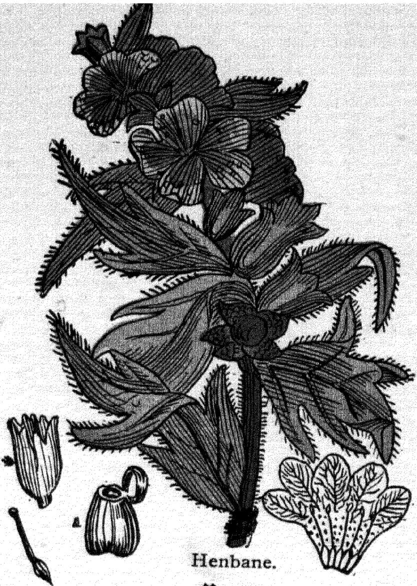
PLATE V.

Henbane.—This plant, like belladonna, is a powerful poison. It is used in the form of an extract to soothe pain. Dose, one-eighth to one half a grain once or twice a day. It is frequently used in cases of delirium, where opium cannot be used. Great caution is needed in its administration.

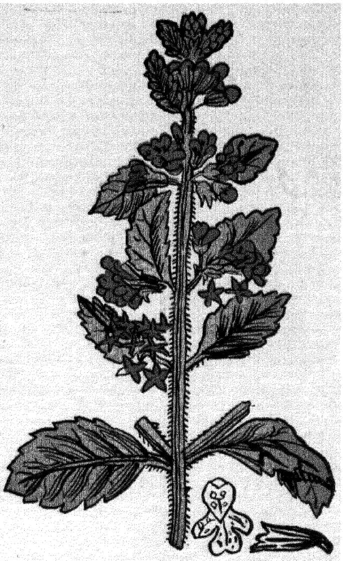
Mountain Balm or Calamint.—Make a tea of the root, dilute with water and sweeten. Give in teaspoonful doses at intervals of half an hour to relieve wind colic in children.

Sage or Salvia.—Sage tea, either alone or mixed with vinegar, honey or alum, is an excellent gargle for sore throats. Drunk freely it cures night-sweats. Simmered in lard and taken four or five times a day in doses of two spoonfuls each cures quinsy.

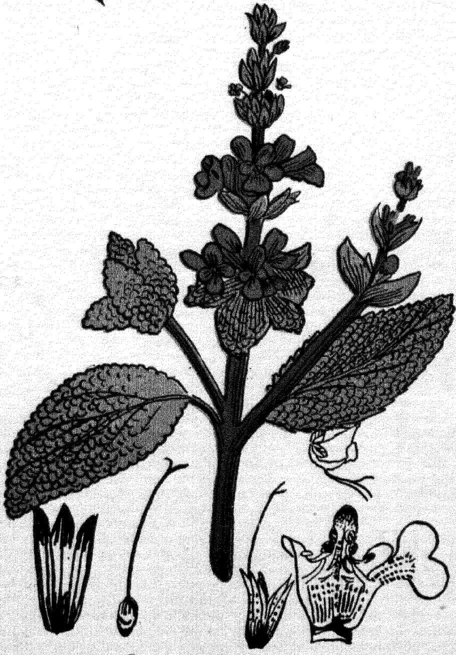
Mustard.—Powdered mustard seeds are used on the table and in medicine. One or two teaspoonfuls in a glass of hot water is used to provoke vomiting. If necessary, repeat the dose till the desired result is reached. Mustard in the form of plasters or poultices soothes pain and promotes circulation. Mustard seeds, in doses of a teaspoonful three times a day, relieves dyspepsia. Mustard plasters, applied to the extremities, serve to bring out again the eruption where it has gone in, in such cases as measles and scarlet fever.



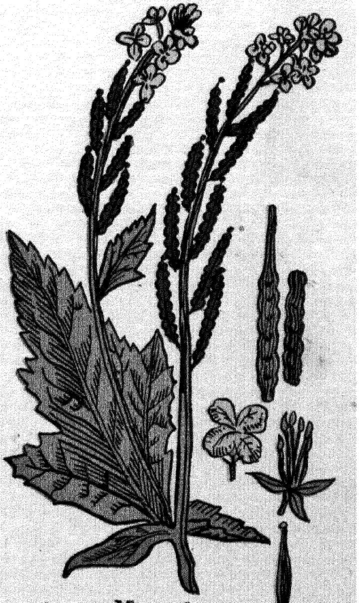
Henbane.



Mountain Balm or Calamint.



Sage or Salvia.



Mustard.

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PLATE V.

Sage or Salvia.

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PLATE V.

MEDICINAL PLANTS

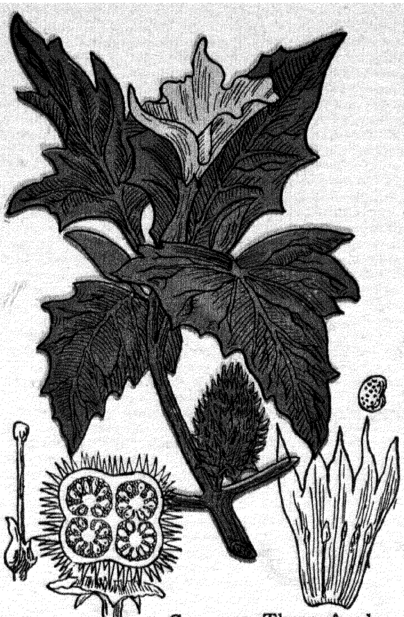
PLATE VI.

Common Thorn-Apple.—This plant belongs to the same family as henbane and belladonna. Cigarettes made from the dried leaves, and smoked, are good to calm asthma difficulties.

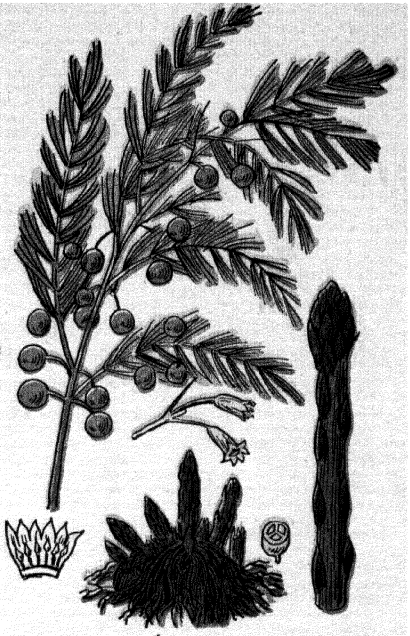
Asparagus.—Used as a table dish gently stimulates the kidneys. In the form of tea, drunk at three or four hour intervals, it promotes a free flow of urine.

Marshmallow.—The powdered root may be used as a poultice in cases of gangrene. A fresh infusion (tea), drunk freely, is of service in children's diseases, and especially in Bright's disease. Marshmallow drops are useful in sore throat, in scarlatina and diphtheria. The dose is indefinite. An infusion, drunk freely, is good for acute gonorrhea, and all affections of the mucous membrane of lungs and bowels, and inflammations of kidneys and bladder.

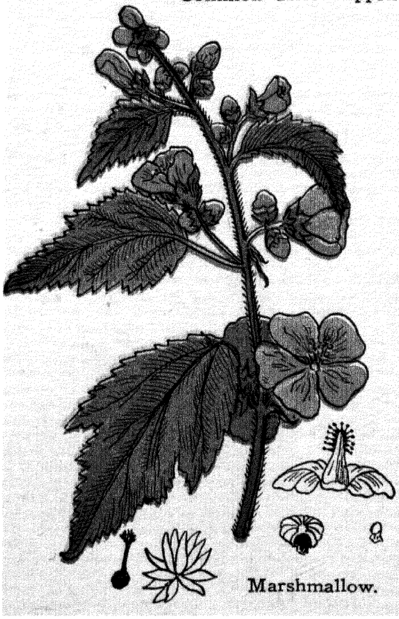
Hops.—The root, used as a powder or pill, soothes the irritation of the urinary organs and pains of gonorrhea. Infusion of hops, or hop tea, is made by taking a tablespoonful of hops to a pint of water and is given in doses of two to five ounces, twice to three times a day. In delirium tremens hop-tea quiets drink craving and settles the stomach. In insomnia and restlessness it is useful in producing sleep. A hop poultice gives relief in local painful affections. Or the hops may be placed in flannel and moistened with hot whiskey and applied to painful cases, as in toothache or earache, where the warmth and steam are very soothing. The inhalation of the vapor of hops is often attended with good results, especially in diseases of the throat and chest.



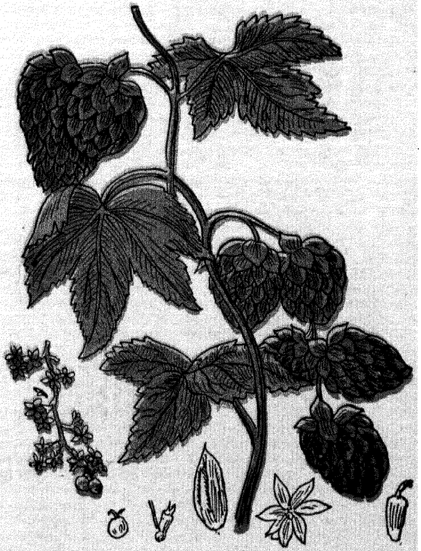
Common Thorn-Apple.



Asparagus.



Marshmallow.



Hops.

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PLATE VI.

MEDICINAL PLANTS

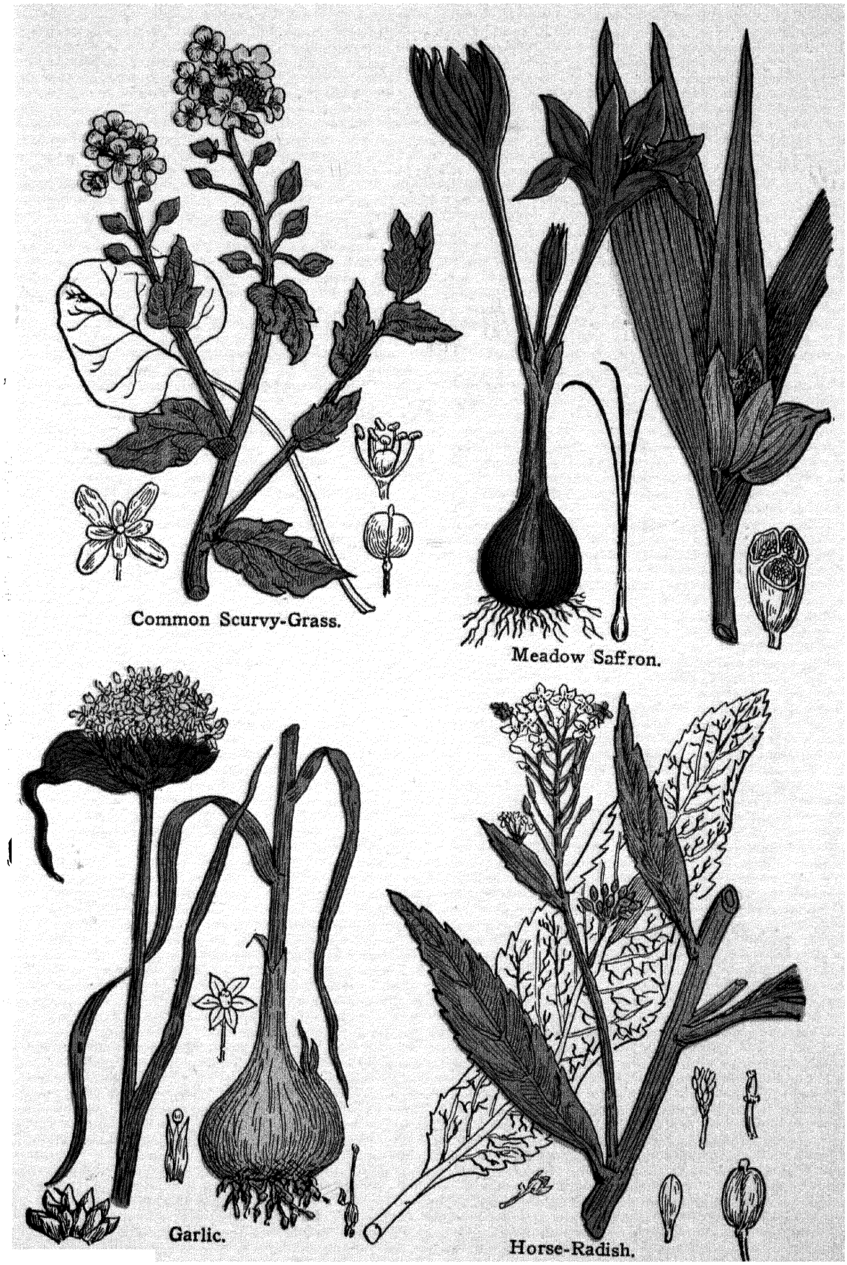
PLATE VII.

Common Scurvy-Grass.—This plant is popularly eaten as a salad and is useful in scurvy, chronic rheumatism and chronic malaria. The juice has been used externally for the purpose of stimulating indolent ulcers and, diluted with water, as a mouth-wash for spongy gums and ulcers of the mouth.

Meadow Saffron.—Saffron-tea, drunk freely, is used in domestic practice to bring out the eruption in measles and scarlet fever and to cause sweating. Externally it is used in bruises, rheumatic and neuralgic pains and in the form of ointment for bleeding piles.

Garlic.—Garlic, onion and leek are used in bronchitis and chronic cough. Here it can also be applied to the chest in the form of a poultice, or the oil can be used externally. A garlic poultice may also be successfully employed in convulsions and intestinal and stomach troubles of children. Garlic is also given for worms. It is a domestic remedy in whooping-cough. Syrup of garlic is given in doses of five drops to a teaspoonful, two to three times a day, or oftener, if the coughing spells are frequent and violent.

Horse-Radish.—Used as a tonic for the digestion, and to promote the secretion of the kidneys. Syrup of grated horse-radish and honey or sweetened water, taken in teaspoonful doses every hour, will cure hoarseness. Horse-radish tea, drunk freely, is beneficial in rheumatism and neuralgia.



Common Scurvy-Grass.

Meadow Saffron.

Garlic.

Horse-Radish.

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PLATE VII.

MEDICINAL PLANTS

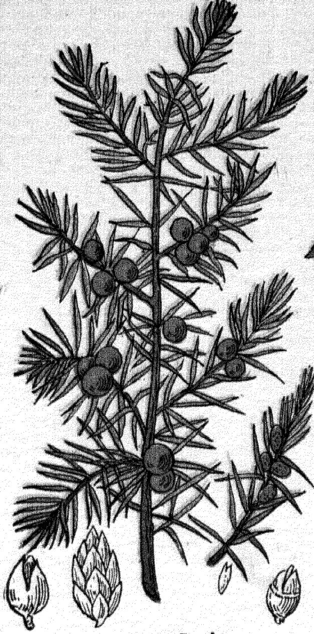
PLATE VIII.

Common Juniper.—By boiling an ounce of the berries (pounded) in two pints of water an infusion is obtained which stimulates the action of the kidneys. A pint is drunk through the day in Bright's disease with its attendant dropsy. The juice of the berries has been successfully used in doses of two or three teaspoonfuls daily in children to promote the secretion of urine. The oil may be dropped in boiling water and inhaled to produce the same effect.

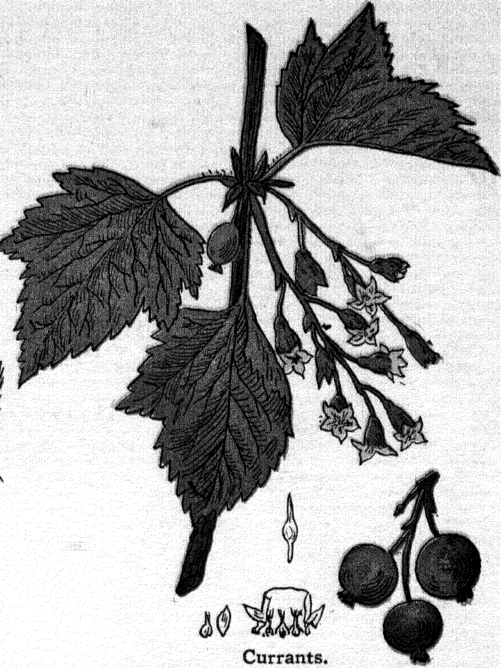
Currants.—The juice of the berry, boiled and sweetened, and in teaspoonful doses three or four times a day, is binding in infantile diarrhœa.

Common White Hoarhound.—The herb may be used in infusion (an ounce to a pint of water), taken hot and frequently in recent colds to produce sweating. The cold tea, drunk freely, is serviceable in chronic lung affections. Cough-drops are used for sore throat and cough.

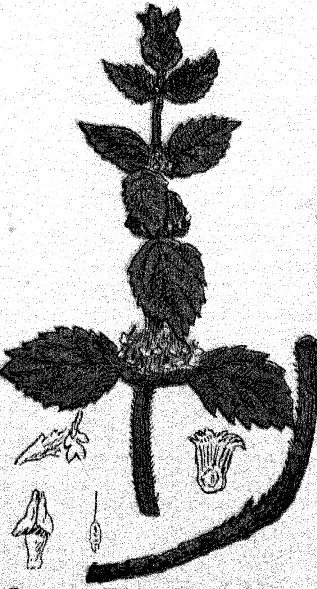
Colt's Foot.—The infusion of the dry leaves is used to soften the phlegm in chronic catarrh. It may be drunk freely.



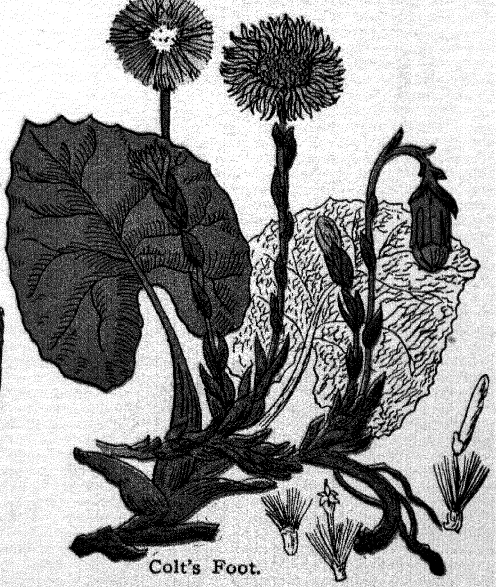
Common Juniper.



Currants.



Common White Hoarhound.



Colt's Foot.

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PLATE VIII.

MEDICINAL PLANTS

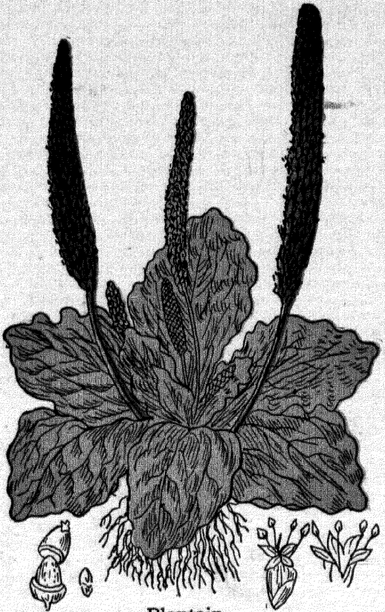
PLATE IX.

Plantain.—The fresh leaves are pounded in a mortar into a paste and applied to wounds to check bleeding. In sumach poisoning, burns, scalds, bruises, and even erysipelas, it is said to be extremely useful.

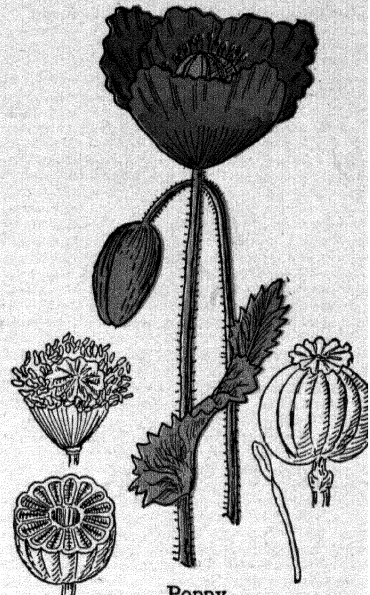
Poppy.—By cutting the unripe seed pod a milky fluid is obtained called opium. Powdered opium may be mixed into a paste with water and applied to a beginning boil with relief. Opium is used in medicine in many forms, as laudanum, morphine, paregoric, and so forth. It is given in various forms and quantities to relieve pain and irritation, to relax spasms, to produce sleep, to check secretions, and to influence nutrition. It should be used with great caution.

Pennyroyal.—Pennyroyal tea, or a recent infusion of the leaves and tops, is used in flatulent colic and recent suppression of the menses. The infusion may be drunk in teacupful doses, several times a day. The fresh herb is said to be obnoxious to mosquitoes, and may be hung about the sleeping room, or the hands and face bathed with a recent infusion or a solution of the oil in alcohol (one to ten) in order to keep off these midnight marauders.

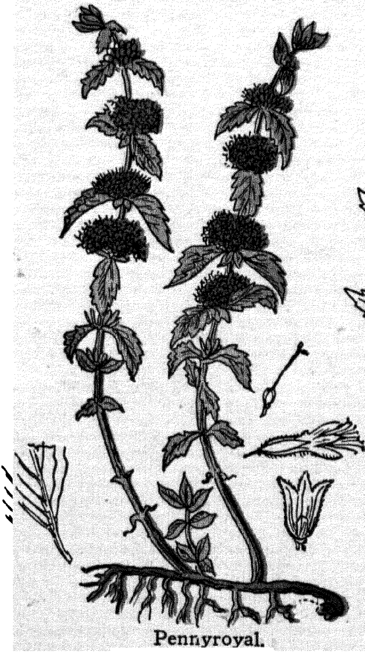
Hellebore.—This has been used by some to bring on the menstrual flow by purging, but is now very rarely employed. It causes vomiting and acts on the heart. It also destroys sensation when used locally. This medicine should be carefully used, as it is very poisonous. The dose is four to fifteen grains. A dose of the fluid extract of black hellebore, three to five drops three times a day, is used in dropsy, especially dropsy of the brain.



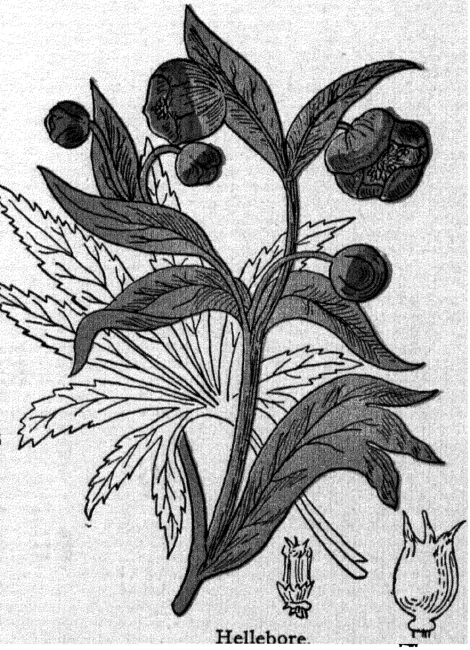
Plantain.



Poppy.



Pennyroyal.



Hellebore.

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PLATE IX.

MEDICINAL PLANTS

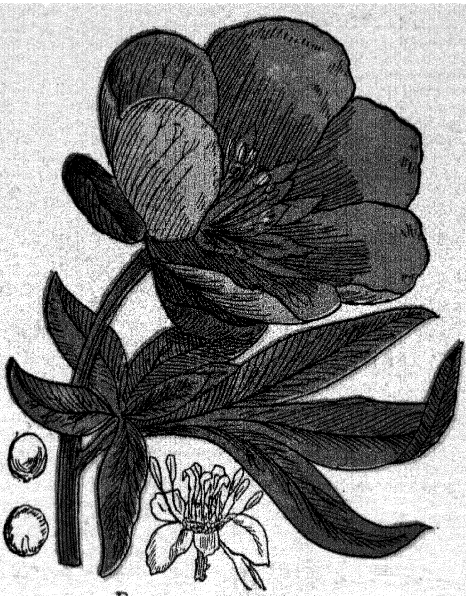
PLATE X.

Peony.—An infusion is made by boiling one ounce of the powdered root in a pint of water. It is good in spasms, whooping-cough and nervous diseases. Dose, half a cup four times a day. Formerly it was considered as a tonic for the nerves and was given for epilepsy and St. Vitus' dance.

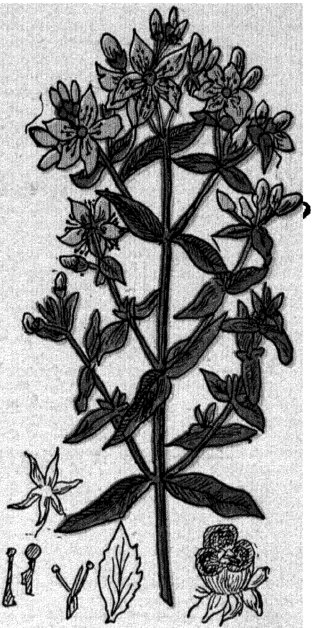
Perforated St. John's Wort.—This plant is used as a tea to promote menstruation. It may be taken in wineglass doses, three to four times a day.

Wolf's Bane.—This drug, which is beter known under the name of aconite, is very powerful and dangerous. It is given in the first periods of fevers and inflammations, such as pneumonia, erysipelas and rheumatism. A few drops of the tincture are mixed in a tumbler of water and a teaspoonful of this is given every ten, fifteen or twenty minutes. Asthma, especially in children, and preceded by cold in the head, is generally benefited by it. In the form of a liniment it is used in neuralgia. Extreme care must be taken in using wolf's bane.

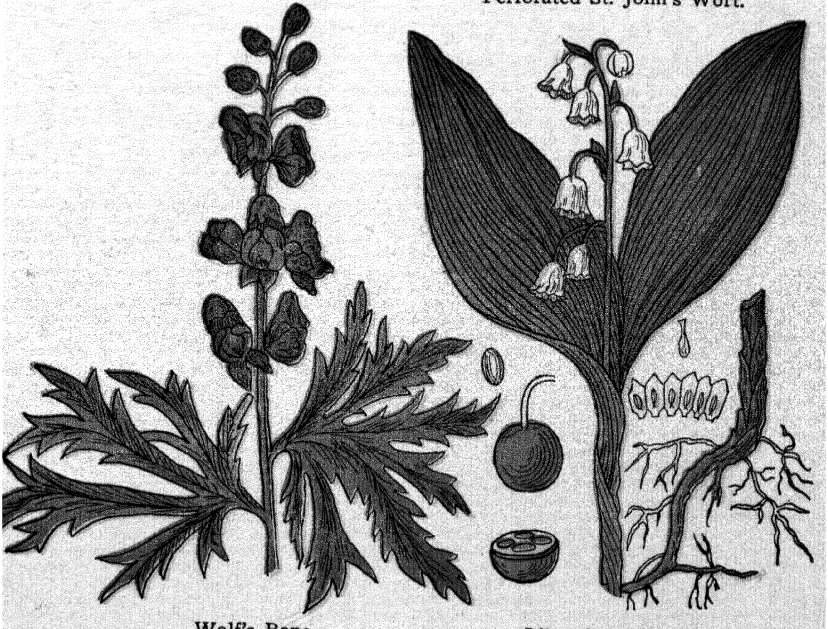
Lily of the Valley.—In small doses this drug strengthens the heart; in larger quantities it quiets it. It quickly relieves the shortness of breath and palpitation in heart disease, and after having been given for two or three days may be stopped for a week or more without the symptoms returning. It increases the flow of urine and reduces dropsy. An infusion or tea is made by taking one part of the underground stem and rootlets to three parts of water. The dose of the infusion is a tablespoonful to a wineglassful two or three times a day.



Peony.



Perforated St. John's Wort.



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Wolf's Bane.

Lily of the Valley.

PLATE X.

MEDICINAL PLANTS

PLATE XI

Flax.—Ground flaxseed mixed with boiling water forms flaxseed poultice, which is spread at least half an inch in thickness upon muslin or flannel, and applied as hot as possible in order to relieve pain and congestion in peritonitis and in pneumonia, pleurisy, and so forth, as jacket poultices, renewed every two or three hours. Flaxseed poultices are also applied to boils and abscesses to abort them or to hasten their ripening.

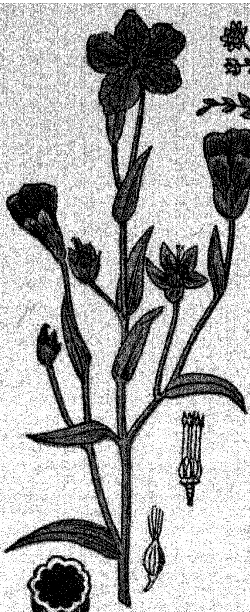
A hot infusion (a tablespoonful to a pint of water) flavored with licorice root or lemon peel is used in colds of the chest, to cause sweating and to loosen the cough. Flaxseed tea, drunk freely, is used as a soothing drink in inflammation of the stomach. Whole flaxseed, in tablespoonful doses, once or twice a day, has been ordered as a laxative in habitual constipation.

The oil of flaxseed, or linseed oil, is an old application to burns.

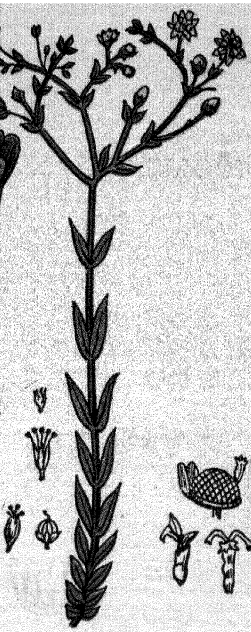
Wormwood.—An infusion is made with one or two teaspoonfuls of the plant to a pint of water, and in wineglassful doses is used as a tonic or for worms in children. It is a domestic remedy for flatulent dyspepsia and weak digestion. Dose, from one to four tablespoonfuls twice a day. Externally it has been used as a stimulating application to indolent ulcers. A tincture, flavored with aromatics, forms an intoxicating drink called absinthe, used to a large extent in France.

Carrot.—The seeds are ground into powder and used to relieve colic and to increase the flow of urine. The dose is half a teaspoonful to a teaspoonful, twice daily. The root is said to be excellent for poultices. Carrot, used as a substitute for chewing tobacco, has been said to cure kidney complaint.

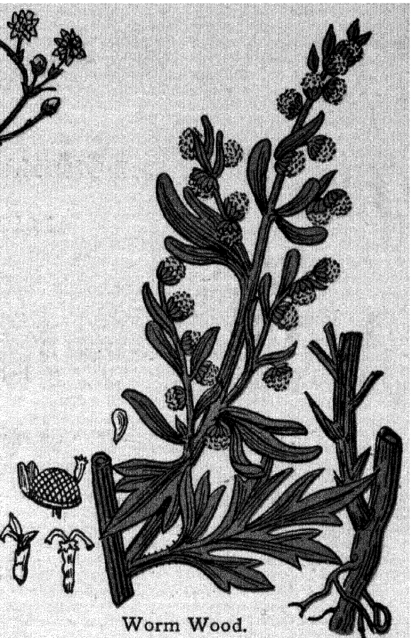
Horse Chestnut.—The bark is used, the best preparation being a fluid extract with dilute alcohol, although a decoction or tea is also employed. The dose of the fluid extract is twenty drops to a teaspoonful, three times a day. It is said to be a good substitute for quinine in malarial fevers and is also used in neuralgia. A dose of the tincture, three to five drops, three times a day, is a remedy for itching or burning piles.



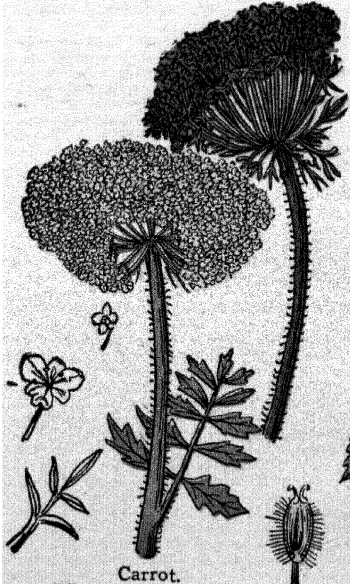
Common Flax.



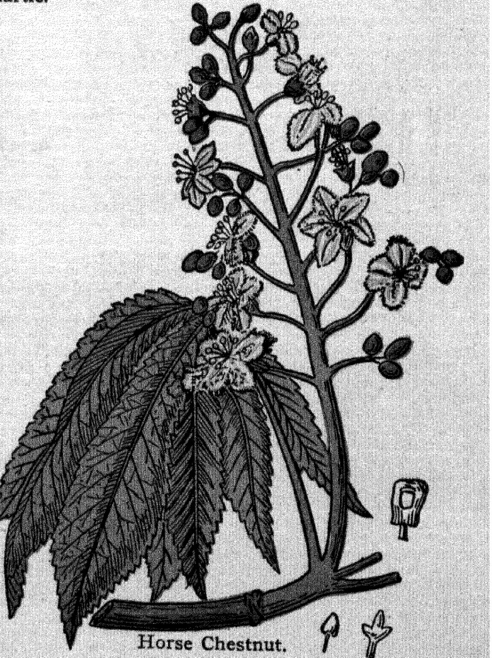
Cathartic.



Worm Wood.



Carrot.



Horse Chestnut.

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PLATE XI.

MEDICINAL PLANTS

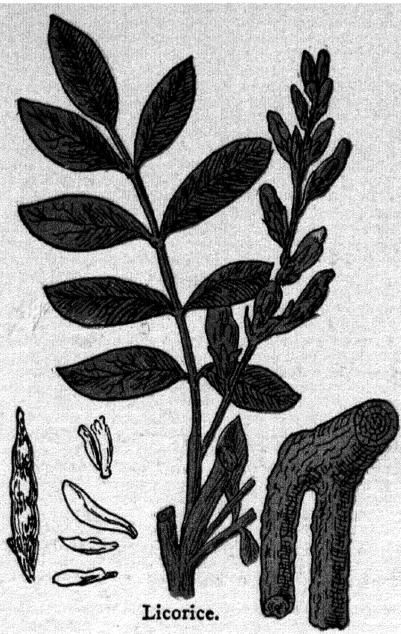
PLATE XII.

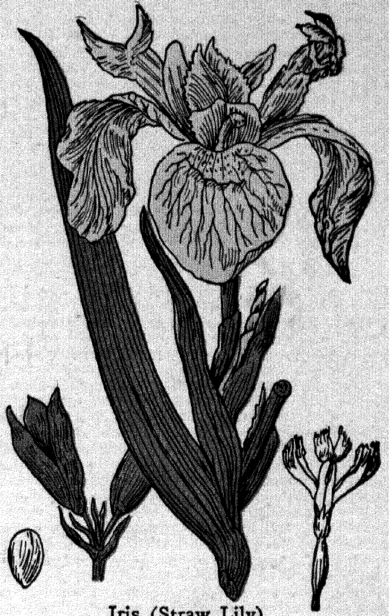
Licorice.—Licorice root is soothing to the throat, loosens cough and is laxative. Licorice is given for cough as Brown mixture and Wistar's cough lozenges. One to two teaspoonfuls of compound licorice powder is given daily in constipation, especially during pregnancy.

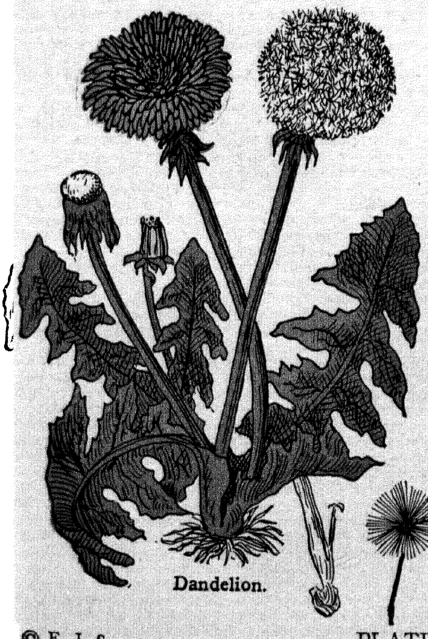
Iris (Straw Lily).—The powdered root, when fresh, produces vomiting and is a powerful cathartic; less so after drying. In chronic liver trouble, especially of malarial origin, the preparations of iris are very useful. In dropsy they are also of service in stimulating both the kidneys and bowels. They are also given for worms. The dose of the extract is a quarter of a grain to a grain, and of the fluid extract, half a teaspoonful to a teaspoonful, two to three times a day.

Dandelion.—The root should be gathered in the autumn. An infusion is made by taking two ounces of the fresh leaves or roots to a pint of water, the dose being two to four tablespoonfuls, two to three times a day. The preparations are bitter and probably stimulate digestion and act as a tonic. Dandelion is a laxative and increases the flow of urine. It is also prescribed for jaundice and for a sluggish liver. If the extract be used, the dose is from five to twenty grains three times a day.

Blackberry—Common Bramble.—The bark of the root is used. It is binding and tonic. It is used in diarrhœa, especially after cleansing the bowels with castor oil. The best preparation of the blackberry root is the fluid extract, given in doses of half a teaspoonful three or four times daily. The syrup and the spiced syrup, in the dose of a teaspoonful to a tablespoonful, are also used. Very popular preparations are blackberry cordial and blackberry brandy, of which a teaspoonful to a tablespoonful is taken three or four times a day. Blackberry tea is valuable as an enema in leucorrhea, gleet and falling of the womb.


Licorice.


Iris (Straw Lily).


Dandelion.

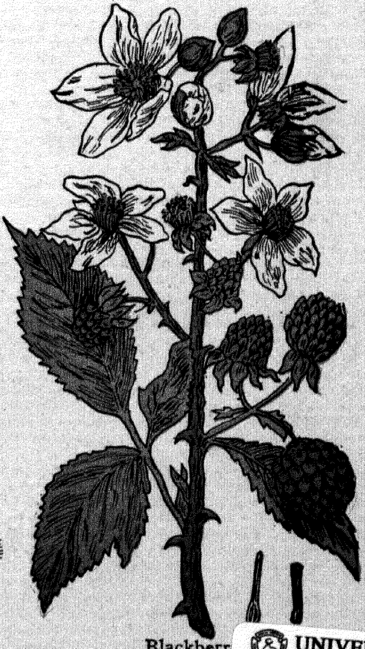

Blackberr

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PLATE XII.

MEDICINAL PLANTS

PLATE XIII.

Great Mullein.—This plant grows by the roadside and in neglected fields. It is given for catarrh, coughs, dysentery and piles in the form of an infusion made with milk, four ounces of the fresh, or a corresponding quantity of the dry leaves, being boiled for ten minutes in a pint of fresh milk. This quantity is to be drunk thrice daily, while still warm. It has long enjoyed a popular repute in Ireland as a remedy in diseases of the lungs. It has likewise been used in diarrhœa and inflammation of the bladder.

The flowers are said to remove warts. They are applied, while fresh, by pressing and rubbing upon the growth.

Rosemary.—From one and one-half to three teaspoonfuls of the plant, dried and powdered, taken as an infusion (tea), are said to produce decided sweating. The oil of rosemary is used in hair lotions and in an ointment used in neuralgia, chronic rheumatism and lumbago.

Nettle.—The juice of the nettle, in teaspoonful doses every hour, is of great value in cases of hemorrhage of the nose, lungs, intestines and urinary organs The decoction may be made either with the seeds or with the leaves, and, drunk freely, is excellent for diarrhœa and dysentery.

Belladonna.—The fleshy, creeping root is especially useful, but must be taken from plants at least three years old. The leaves of belladonna or deadly night-shade are also used, the smaller leaves gathered when the plant is in flower being best.

Locally, belladonna is used as an ointment or liniment in neuralgia, chronic rheumatism; also to check sweating and relieve local pain. Internally, it is used chiefly to relieve pain, relax spasm and check oversecretion or bad discharge.

Its power of widening the pupil is used in treating the eye. In giving this dangerous drug the eye should be carefully watched. The dose of the tincture is five to twenty drops, once or twice a day, in cases of neuralgia, spasms and other nervous affections. Great caution is required, as the medicine is a poison.

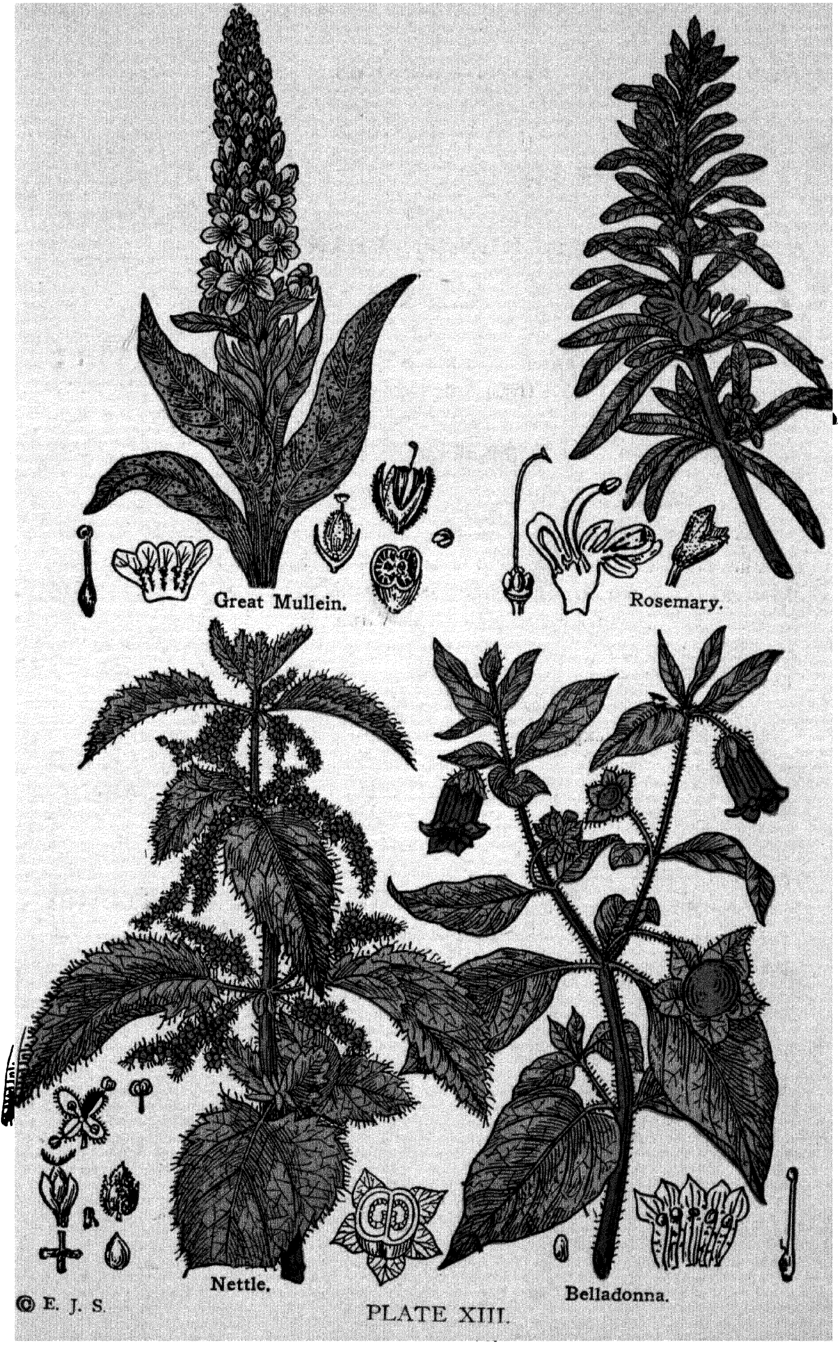

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PLATE XIII.

MEDICINAL PLANTS

PLATE XIV.

Parsley.—A hot infusion is made by taking an ounce of the fresh root to a pint of water. One to four teaspoonfuls, given three times daily, in cases of scanty menstruation will relieve pain. It is used to increase the secretion of urine in dropsy and gonorrhea, in the form of a decoction, drunk freely.

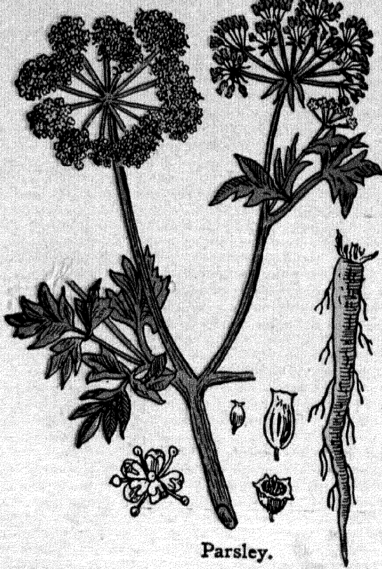
Valerian.—The underground stem and roots are used. It is given in the nervous disorders of women, especially nervous headache and hysteria. The various nervous disorders which occur at the changes are relieved by it. In convulsion or St. Vitus' dance in children, due to worms, and in whooping-cough it has been used with success One to two teaspoonfuls of the tincture is given, three times daily.

Digitalis or Foxglove.—The leaves are gathered from plants of the second year's growth and must be carefully selected. An infusion is made by taking one and one-half parts to one hundred parts of water.

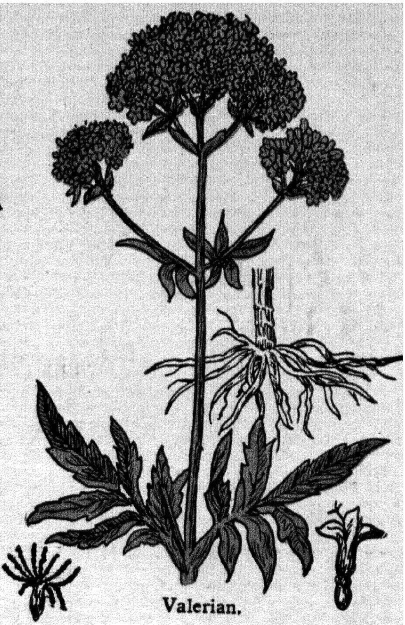
Locally, digitalis is used in joint inflammation. A poultice containing a teaspoonful or two of the leaves is placed over the kidneys in cases of difficult or impossible urination.

Its chief internal use is in heart disease, although it is often given for bleeding. The dose of the infusion is a teaspoonful to a tablespoonful, three or four times a day.

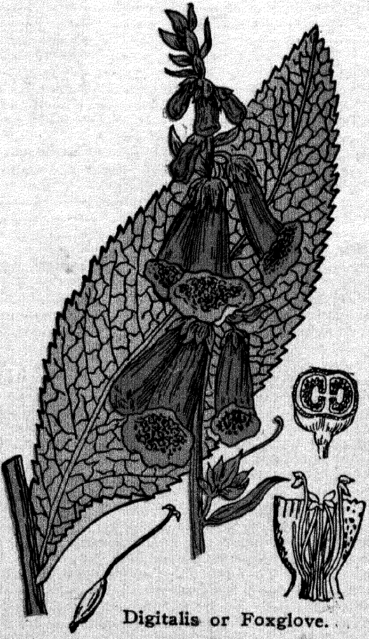
Crow-Foot.—The buttercup plant is sometimes used externally in cases of rheumatism. As it belongs to a very poisonous species, it should be used carefully and only on the prescription of a physician.



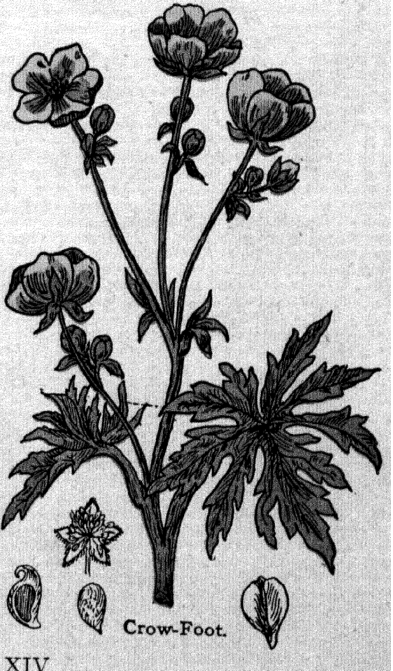
Parsley.



Valerian.



Digitalis or Foxglove.



Crow-Foot.

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PLATE XIV.

MEDICINAL PLANTS

PLATE XV.

Hemlock.—The full-grown fruit is gathered while yet green. Conium juice is expressed from the fresh leaves, and has half its quantity of alcohol added to it to preserve it. This is given in doses of half a teaspoonful to two teaspoonfuls. The seeds are used in making most preparations. Internally it is sometimes used in nervous affections, but it is a dangerous poison and should be used cautiously.

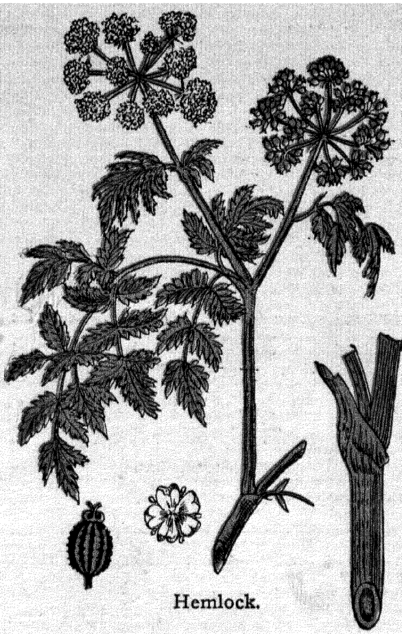
Poultices of the leaves of hemlock and flaxseed (two parts of the former to six of the latter) with boiling water, have been used as a soothing dressing to painful swellings. A hemlock ointment is made by bruising the leaves with sufficient water and extracting and mixing the juice with lard, and is an excellent local remedy in painful maladies.

Barberries.—The bark of the root has been made into an infusion, but the fluid extract in ten to thirty drop doses is most used. In this form the drug is tonic and stimulates the kidneys. It is valuable in the treatment of blood diseases, dyspepsia, liver trouble, habitual constipation and skin diseases. The tea of the bark may be taken in doses of three to four teaspoonfuls, three times a day.

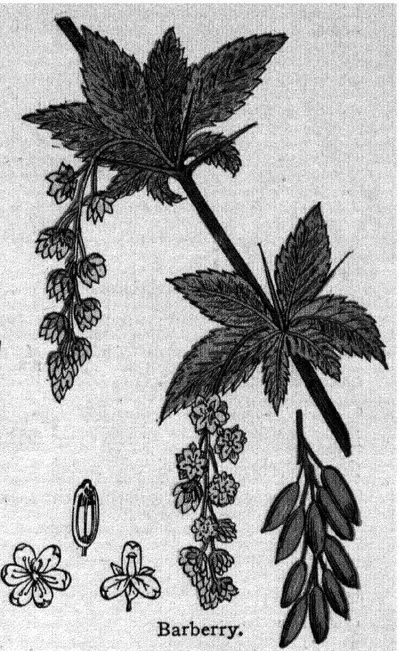
Elder.—One to two teaspoonfuls of an infusion of the flower, drank while hot, increases the flow of urine and causes sweating. It may cause vomiting, if given in too large a quantity. The flowers are edible, and are used in scurvy, rheumatism and syphilis. Elderberry jam is laxative.

A decoction is made of the inner bark, which acts on the kidneys and intestines. One or two teaspoonfuls, two to three times a day, is the dose.

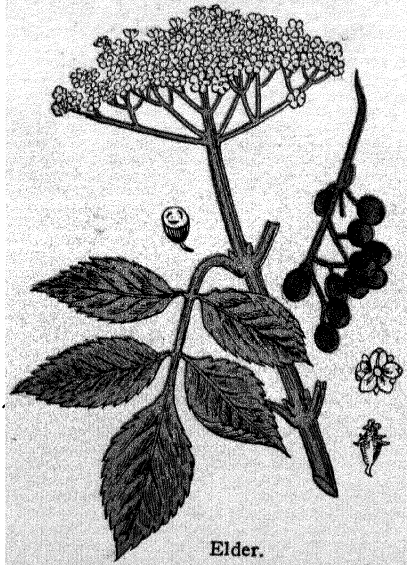
Oak-Tree.—A decoction is made of one ounce of the bark to a pint of water and given in doses of half a teaspoonful to a teaspoonful three times daily, for dysentery and diarrhœa. It is occasionally used as an injection or wash in leucorrhea; also as a gargle in sore throat and catarrh. The powdered bark is used on ulcers. The oak yields tannic acid, in which form it is used as an astringent enema in gonorrhea, gleet and leucorrhea.



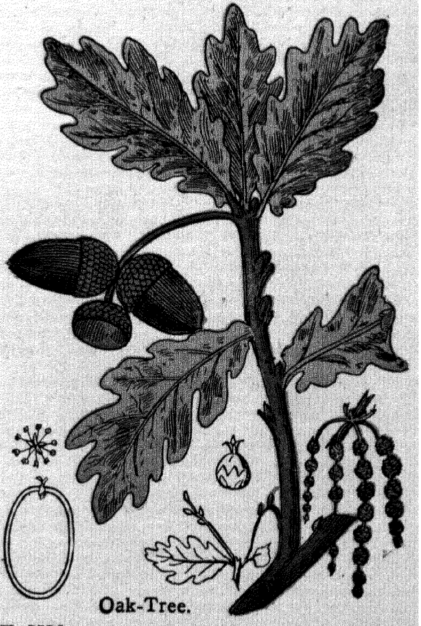
Hemlock.



Barberry.



Elder.



Oak-Tree.

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PLATE XV.

MEDICINAL PLANTS

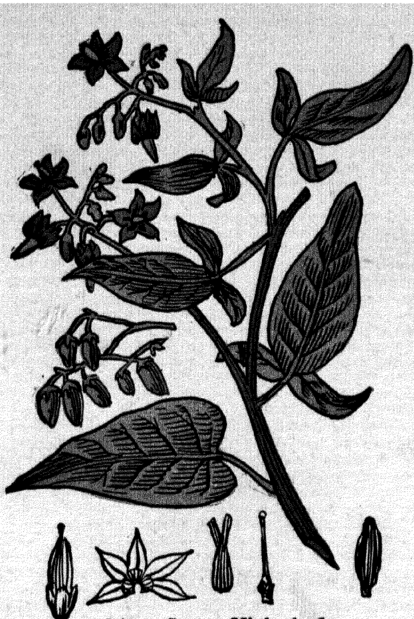
PLATE XVI.

Bitter-Sweet Nightshade.—A decoction is made by boiling an ounce of the young branches in a pint of water and given in doses of a teaspoonful to a wineglassful two or three times daily, for jaundice, rheumatism and syphilitic affections. It is believed to be of use in long-standing scalv eruptions. The fresh decoction, drunk freely, is used to produce sweating in rheumatism or acute bronchitis and colds. It is also beneficial in the diarrhœas of children when caused by exposure to cold or damp. The dosage should be small and cautiously given.

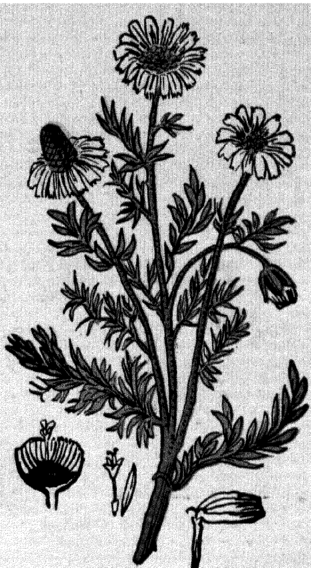
Common Chamomile.—The infusion is made with a tablespoonful of the flower heads to a pint of water and is taken freely. In large doses the hot infusion causes vomiting, but in one or two ounce doses it relieves gas in the stomach, favors perspiration and the action of the kidneys. Locally, it may be used as a poultice. It is used principally in domestic practice in the treatment of colds, bronchitis and dyspepsia, and is taken in the form of an infusion in doses of from two to three tablespoonfuls, two or three times daily.

Caraway Seed.—An oil is made from the fruit and used in doses of one to five drops, two or three times a day, for distention of the abdomen due to gas. It is combined with other medicines to lend a pleasant flavor and to prevent griping.

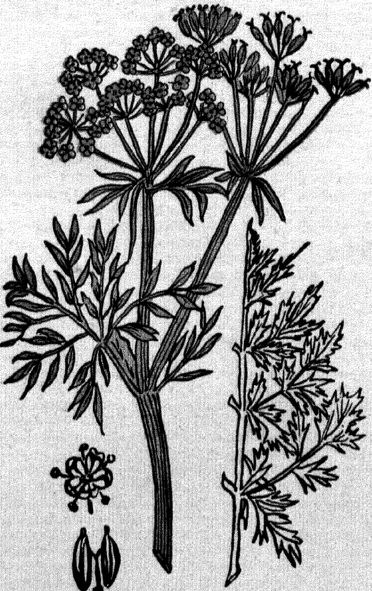
Geranium.—A decoction can be made from the underground stem. It improves the appetite and digestion and promotes nutrition. It is used to stop bleeding. As an injection it is serviceable in gonorrhea, gleet and leucorrhea. In diarrhœa in children the decoction may be given in milk, which covers its taste. Dose, one-fourth to one-half teaspoonful, five or six times a day.



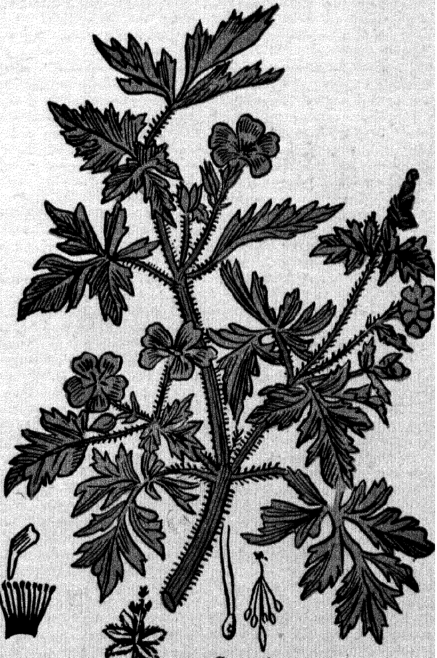
Bitter-Sweet Nightshade.



Common Chamomile.



Caraway Seed.



Geranium.

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PLATE XVI.

MEDICINAL PLANTS

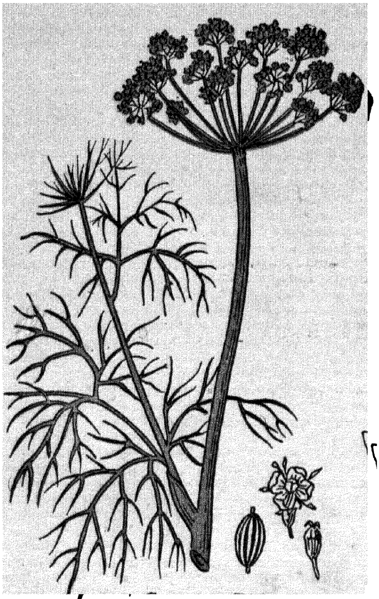
PLATE XVII.

Common Dill.—The fruit of this plant is warming, stimulating and quiets nervousness. A tea of the plant, in teaspoonful doses, is used in children's colic to relieve the hiccoughs. Occasional use of the decoction by mothers is thought to promote the secretion of milk.

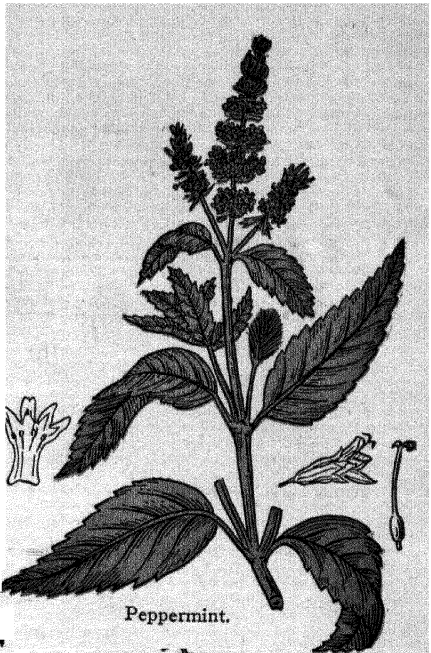
Peppermint.—Peppermint water is given in doses of teaspoonful to a wineglassful; oil of peppermint, one to five drops, and spirits of peppermint, ten drops to a teaspoonful. In neuralgia oil of peppermint may be painted over the painful spot. It may also be used for rheumatism and chronic gout. In the colic of children the spirits of peppermint in hot water is a good household remedy. A warm infusion of mint, taken frequently in teaspoonful doses, is useful for the pains caused by gases in the intestines. A cloth, saturated in a teacup of water to which a teaspoonful of essence of peppermint has been added, applied to head and temples, gives relief from headache.

Mezereon (Laurel).—An ointment is made from the fluid extract of the bark (twenty-five parts), lard (eighty parts) and yellow wax (twelve parts). This ointment is used as an irritant to keep up discharges from ulcers and blistered surfaces. Mezereon bark has been successfully used to relieve toothache.

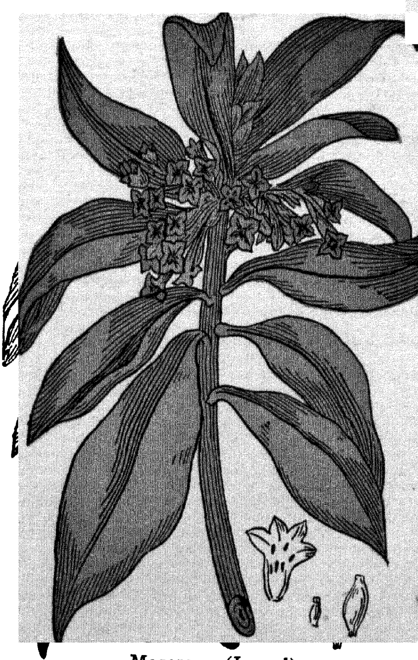
Common Black Briony.—The root is dried, and half an ounce of it with a pint of boiling water made into an infusion, which is given in doses of a wineglassful three or four times a day. It may be given for dropsy and inflammation of the joints. It is an active purgative, causing large, watery stools.



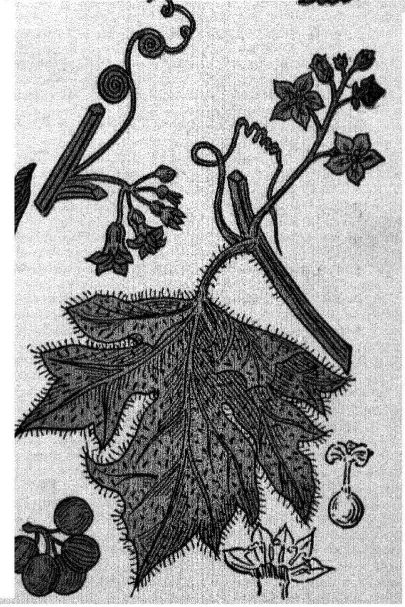
Common Dill.



Peppermint.



Mezereon (Laurel).



Common Black Briony.

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PLATE XVII.

MEDICINAL PLANTS

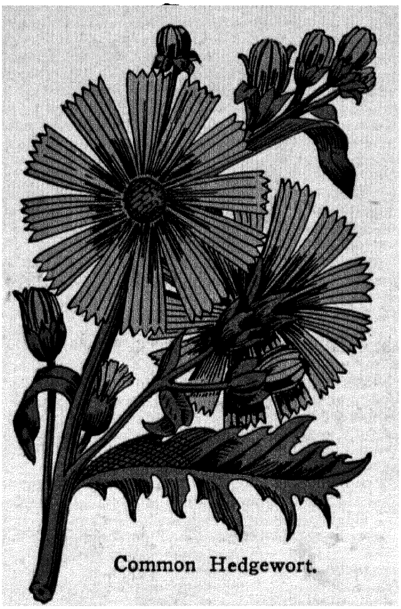
PLATE XVIII.

Common Hedgewort.—Liquid extract of the root is used inwardly for catarrh of the stomach, liver, pancreatic and kidney complaints, hypochondriasis and hysteria. Physiological effect is solvent, acid-removing (alkaline) and blood cleansing. Chemical constituents: Bitter extract, resin, sugar, alkaline salts, potash, silicic acid. Taste, very bitter.

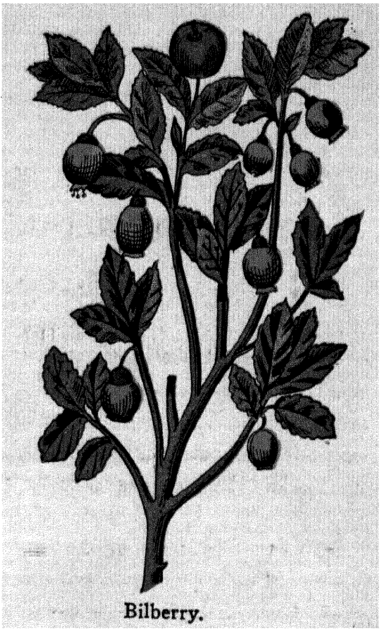
Bilberry.—Infusion of the leaves is given internally for dropsy and pleuritic effusions, catarrh, cough, and weakness of the bladder. Physiological effect: slightly astringent. Chemical constituents: Tannic acid, quinic acid, and gum. Taste, herbaceous.

Wild Strawberry.—An infusion of the leaves is given internally for diarrhœa, gout, jaundice, etc. The physiological action is astringent and blood cleansing. The chemical constituents are a considerable quantity of soda salts and silicic acid. The taste is slightly herbaceous.

Periwinkle.—The liquid extract of the herb is used internally for diarrhœa, mucous discharge from the air passages or intestines, hemorrhage; externally, as a gargle and mouth wash for spongy gums. Physiological action: Strengthening, blood cleansing and aperient. Chemical constituents. A very bitter extract and tannin. Taste is bitter and astringent.

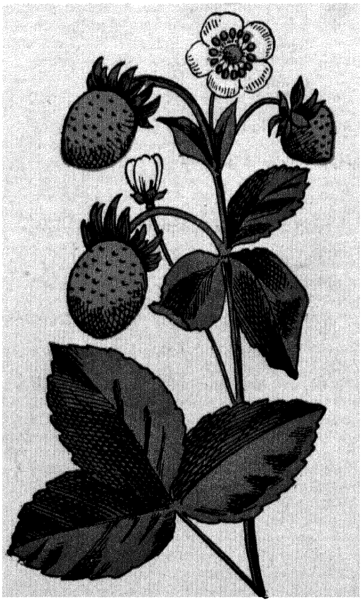


Common Hedgewort.

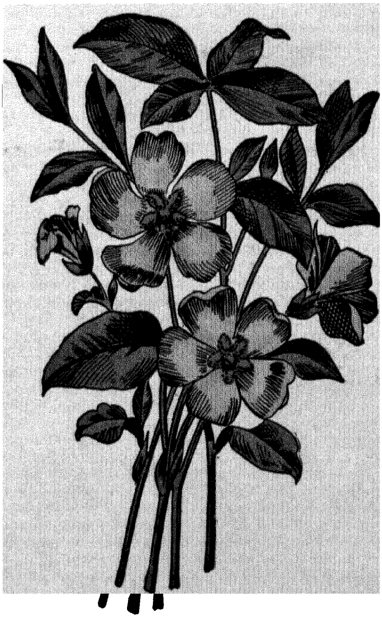


Bilberry.

Bilberry.



Wild Strawberry.



Periwinkle.

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PLATE XVIII.

(Continued from page 1392)

several times a day of a tea made by boiling celery stalks till they are soft. At the same time celery, cooked or raw, should be used regularly as a table food.

CHAMOMILE (Anthemis).

Definition.—The flower heads of anthemis nobilis are collected from the cultivated plant. The oil is the active principle.

Use.—The activity of the plant depends upon the presence of the oil. The action of the oil is to act as a sedative to the nervous system; hence its use in checking reflex cough. It also favors free perspiration and free kidney action.

Manner of Using.—Make a drink as follows: Pour a pint of boiling water over an ounce each of chamomile flowers and the leaves and flowering tops of boneset; one-half of this amount is a dose. If the whole amount be taken, emesis or vomiting will be produced, and this will at times be the action desired.

CHITTIM BARK (Rhamnus Prushiana).

This is known medicinally as cascara sagrada. It is much used by modern physicians for the cure of constipation, and is an excellent home remedy. It is prepared for use by steeping a half-ounce of the bruised bark for half an hour in a half pint of warm water. When cool, take a teaspoonful three times a day. If the fluid extract of the bark is used the dose would be from ten to fifteen drops, three times a day. Sometimes it acts as a physic. In such cases the size of the dose should be diminished.

CHLORAL (Chloral).

Definition.—Chloral is a colorless liquid formed by the action of chlorine on alcohol. With water chloral forms a crystallizable compound. Chloral should be kept in well-stoppered bottles as the crystals volatilize slowly.

Use.—Taken internally chloral has a sedative influence on the brain and spinal cord. In cases of restlessness and delirium it produces a quieting influence on the brain and induces sleep. In spasm and convulsion it alleviates this condition. It influences the heart adversely, and in cases of a weak or diseased heart its use is attended with danger.

Manner of Using.—It is best given well diluted in some agreeable syrup. It should not be taken without the advice of a physician.

CHLOROFORM (Chloroformum).

Chloroform is a heavy liquid made by the action of chlorine on alcohol. It is used in the same class of cases as ether, but is preferred to ether in children and old persons on account of the irritation of the bronchial tubes produced by ether in the very young or very old.

CITRIC ACID (Acidum Citricum).

Definition.—Citric acid occurs in the form of colorless crystals. It is obtained from lemon or lime juice and has a sour taste.

Property.—It acts favorably upon the liver in cases of inactivity. By stimulating the glandular secretion of the intestinal tract it improves digestion and nutrition.

Use.—The use of citric acid in the treatment of scurvy is well known and cannot be superseded by any remedy at present under our command, except fresh lemon juice itself. In fevers a drink made of citric acid is very soothing.

Manner of Using.—The best form for administration is the syrup of citric acid, which may be given in doses from a teaspoonful to a tablespoonful.

COCA (Erythroxylon).

Definition.—Coca leaves are taken from a small tree in Peru and Bolivia. The principal constituent of the leaves is cocaine.

Use.—The value of coca lies in cocaine. Cocaine is widely used locally for the relief of pain. It may be applied for the performance of an operation when for any other reason it is not desirable to give a general anesthetic like ether or chloroform.

COCHINEAL (Coccus).

Cochineal is derived from the crushed and dried bodies of the females of coccus cacti. It yields a very brilliant red coloring matter from which carmine is obtained. Cochineal has but little value in medicine in comparison with its use in the arts as a coloring agent.

COD-LIVER OIL (Morrhuæ Oleum).

Definition.—Cod-liver oil is a thin, yellow, oily liquid, having a fishy odor and taste. It is obtained from the fresh livers of the cod.

Use.—Cod-liver oil is an easily digestible food. In most cases of poor nutrition it is of value.

Manner of Using.—Cod-liver oil should not be taken directly after a meal. It should be taken about three hours after a meal, when gastric digestion is about complete, from the fact that oil is digested not in the stomach, but in the intestine.

COFFEE (Coffea).

Definition.—Coffee is the seed or berry of the coffee Arabica. It is one of the sources of caffeine.

Use.—Coffee is a stimulant to the nervous system. It increases the capacity for intellectual effort. When taken to excess it is frequently the cause of headaches.

COLT'S-FOOT (Tussilago Farfara).

Parts used—root and leaves.

Its demulcent properties prove its efficacy in chronic coughs, consumption and other affections of the lungs. It is used in the form of a decoction made with an ounce of the plant to a pint of boiling water, of which a teacupful may be given several times a day.

Description.—A perennial herb with a creeping root. The flower, which stands singly, is large and yellow in color. The leaves do not appear until after the flowers have blown. The flowers have an agreeable odor.

COMMON RUSH (Juncus Effusus).

A common plant, growing in water, or in wet soil, with pithy or hollow, rarely branching stems. A decoction of the root—one ounce of root to a pint of water—taken freely three times daily, is good for the kidneys, dropsy, gravel and incontinence of urine. Ashes of the rush, in doses of five to ten grains twice a day, relieves dyspepsia and sour stomach. A tincture of the rush, made by adding a handful of the plant to a pint of alcohol, and taken freely three times a day, is also good for incontinence of urine. The pith may be used as a demulcent drink in fevers.

COPAIBA (Copaiba).

Use.—This balsam comes from a tree in South America. Its principal use is relieving the irritation in inflammations of the urinary channels, especially in gonorrhea.

CRANESBILL (Geranium).

(*See Plate XVI.*)

CRANBERRY.

A cranberry poultice is an excellent application to the affected parts in cases of piles. They also serve as a cure when cooked for table use, and partaken of freely at each meal. Pounded cranberries, applied as a poultice, are excellent for removing the pain and inflammation of erysipelas. In doses of a tablespoonful daily cranberry extract is said to afford relief in hysteria.

CREOSOTE (Creosotum).

Definition.—Creosote is obtained from the distillation of wood tar. The best preparation is made from beechwood and is known as beechwood creosote. Creosote is a yellow, oily liquid having a smoky odor.

Use.—Creosote is an antiseptic and local anesthetic. Internally also it is an antiseptic and is used in diarrhœa and dysentery. In consumption its use is often followed by a diminution of all the symptoms and general improvement.

Manner of Using.—It may be given internally in milk, cod-liver oil or wine. It may also be given in capsules.

DANDELION (Chicory Family).

(*Blow Ball or Cankerwort.*)

This is a common herb and salad plant, having a bitterish taste and a milky root with a yellow blossom on a single stem. The young leaves are used for salad or greens. The root is medicinal and its uses are described on page 1426. Naturally growing wild, it is now raised by market gardeners.

DEADLY NIGHTSHADE (Belladonna).

(*See Plate XIII.*)

ERGOT OF RYE (Ergota).

Definition.—Ergot is the compact spawn of a parasitic fungus investing the rye.

Use.—The chief action of ergot is upon the parturient uterus, which it contracts. It assists nature. Also used to control hemorrhage.

Manner of Using.—The fluid extract is the preparation most often employed.

ETHER (Æther).

Definition.—Ether is a clear, colorless liquid having its own peculiar odor and a sweetish taste. It is very inflammable, and its vapor mixed with air and ignited explodes.

Use.—When ether is poured upon the skin it produces a sensation of cold from its rapid evaporation. The part may be frozen, and at this time a small operation, such as the opening of an abscess, may be performed. Taken internally ether is a stimulant to the heart. Its well-known effects in surgery, producing the state known as anæsthesia, depend upon the action of the drug upon the brain and spinal cord. It was first used in surgery by Dr. Warren in 1846 at the Massachusetts General Hospital.

Manner of Using.—To produce loss of consciousness the vapor is inhaled, administered with safety only by a physician. For local use the vapor is locally applied.

EUCALYPTUS OIL.

Eucalyptus is a genus of trees indigenous to Australia and Tasmania but now grown in United States and many other parts of the world. The medicinal part is the oil distilled from the leaves. Taken internally it produces a sense of warmth in the stomach and excites the flow of saliva. It is sometimes given for malaria, chronic bronchitis, asthma, gonorrhœa, etc. Dose 10 to 20 minims. It is sometimes used locally in ulcers and chronic skin affections.

FLAXSEED (Linum-Linseed).

(*See Plate XI.*)

FOXGLOVE (Digitalis).

(*See Plate XIV.*)

GALLIC ACID (Acidum Gallicum).

Definition.—Gallic acid may be obtained from tannic acid, which is found in the galls upon the oak tree. These galls or nodes are lumps caused by insects. Gallic acid is in the form of long needles.

Property.—Gallic acid, like tannic acid, is astringent, but not so powerful as tannic acid.

Manner of Using.—When prompt action is desired it should be used in powder. It is given also in other forms, such as pills, and so forth.

GARDEN ARTICHOKE (Cynara Scolymus).

A perennial plant, cultivated in our gardens. A tincture prepared from the leaves is most efficacious in rheumatic, gouty and neuralgic affections. Dose: A teaspoonful three times a day.

GARLIC (Allium).

(*See Plate VII.*)

Definition.—Garlic is the dried bulb of the allium sativum, a native of Asia and Egypt, but now naturalized in Europe and America. It resembles the onion and leek.

Use.—When added to a cough mixture garlic aids in the expectoration of secretion. For this latter purpose it is especially valuable in the case of children. Taken internally it is also a remedy against scurvy, hence called an antiscorbutic. Applied locally in the form of a poultice to the abdomen it relieves infantile intestinal colic.

Manner of Using.—The odor is quite offensive, and some will prefer other measures on this account. The preparation for internal use is known as the syrup of garlic, which may be used in a dose from ten drops to a teaspoonful.

GINGER (Zingiber).

Ginger comes from various sources, but Jamaica ginger is preferred for culinary purposes, as it has the best flavor. Ginger increases the secretions of the intestinal tract, and acts as a carminative. It is used in various preparations to disguise the unpleasant taste.

GLYCERINE (Glycerinum).

Definition.—Glycerine is a transparent substance obtained by the decomposition of fats or fixed oils. It is a constituent of the waste in the process of the making of soap. It is now prepared in large quantities for commercial purposes.

Use.—Taken internally glycerine is in part absorbed or oxidized and so acts partly as a food. If a large amount, as a tablespoonful or two be taken, it acts as a laxative. Externally applied it acts as an emollient. In the care and treatment of bed sores it is highly useful. The parts should be bathed twice daily with warm water and gently rubbed with glycerine.

GRAPEVINE (Vitis Vinifera).

The vine is too well known to require description. Most useful in dropsy and chronic dysentery. The dried fruit is the part employed, of which an infusion is made, placing about two ounces of the fruit in a pint of boiling water, straining and cooling. Dose: A tablespoonful, in either case, every two or three hours, according to the urgency of the symptoms.

HEMLOCK (Conium).

(*See Plate XV.*)

HONEY (Mel).

Definition.—Honey is a saccharine secretion deposited in the honeycomb by the honey-bee, the apis mellifica. The best honey is known as virgin honey. It is obtained by incising recent combs and straining. Clarified honey is made by heating honey, removing the frothy scum and straining. Other products made by the aid of heat are of a darker color and are less pure.

Use.—Honey is to some slight extent a laxative. It is a pleasant, sweet article of food.

HOPS (Humulus).

(*See Plate VI.*)

HOUNDS' TONGUE (Cynoglossum Officinale).

A biennial plant, named from the shape of its leaves. The root is the part employed. It has been found most useful as a sedative in coughs, catarrh, spitting of blood and dysentery. An infusion is made with one ounce of the root to a pint of water. Dose: A tablespoonful four times a day.

INDIAN HEMP (Cannabis Indica).

Definition.—Indian hemp is obtained from the flowering tops of the female plant of the canabis sativa grown in the East Indies. There is a confection known as haschish or gunjah.

Use.—This drug is much used in Eastern countries and is a frequent cause of insanity in these countries. It is taken for the pleasant mental effect produced, though this is but temporary. The first stage is accompanied by exhilaration during which the imagination is actively engaged. The imagination brings up images of its own creation. After a time the pleasant effects are followed by unpleasant and disagreeable effects. Ideas of time and space are perverted. Frequent indulgence in the drug brings about permanent mental change. An impulse to kill has been known to follow the abuse of the drug. For medicinal purposes cannabis is used to quiet spasms and produce mental quietude. In accordance with this use it is employed in treating coughs and the restlessness and delirium of certain diseases. It has been used with benefit in neuralgia.

Manner of Using.—The tincture is the preparation usually employed, though it should never be taken without a physician.

IPECAC (Ipecacuanha).

Definition.—Ipecac is the dried root of a plant which is native in Brazil.

Use.—Ipecac is used as an emetic and expectorant. It enters as an ingredient in cough preparations to soften the expectoration of phlegm. It has been used in heavy doses for dysentery.

KEROSENE OIL.

Appendicitis.—Since the theory that this disease is curable by absorption has gained prominence, the use of kerosene oil in connection with the cure has been found useful.

Bunions and Corns.—A continuous application to corns and bunions for a few days will reduce inflammation and pain, and an entire removal of the corn may be brought about.

Burns.—Cloths saturated with kerosene, and applied to burns. exclude the air and bring desired relief from pain.

Cleansing the Scalp.—A little kerosene introduced into glycerine constitutes an ointment that will speedily remove dandruff and contribute to a clean and healthy scalp.

Colds.—Ten to twelve drops of kerosene oil on cut loaf sugar, taken every two or three hours, has been found effective in curing colds, also rub neck and chest.

Consumption.—A cloth saturated with kerosene oil, bound around the chest at night and frequently repeated, will remove lung soreness, and it may be taken inwardly with advantage. Eight to ten drops three or four times a day in sarsaparilla. It has been tried as a remedy for consumption.

Croup.—Kerosene has been used in croup with success. It may be taken internally 10 to 15 drops on sugar. Repeat if necessary.

Diphtheria.—Swabbing of the throat, at intervals of two to three hours, with kerosene, has been found effective in destroying the membrane of diphtheria and reducing inflammation.

Quinsy.—External and internal use of kerosene has a remedial effect in this obstinate disease.

Rheumatism.—Petroleum was a favorite Indian remedy for rheumatism. In the purer form of kerosene it is still regarded as a favorite remedy for this painful disease. It may be applied by frequent rubbing.

Toothache.—Cotton saturated with kerosene and placed in the tooth often affords immediate relief.

Vegetable Poisons.—Kerosene is an excellent lotion for the external inflammation resulting from vegetable poisons. It should be applied frequently until relief is had.

LACTIC ACID (Acidum Lacticum).

Definition.—Lactic acid is a colorless syrupy liquid having an acid taste. It is obtained from sour milk.

Use.—As this acid is found in the stomach during the first part of digestion, changes in the amount present cause forms of dyspepsia. When in excess or when it is absent dyspepsia in one form results. Its use in cases of deficiency added to that of pepsin, is followed by beneficial results. Locally it is a mild caustic, and is applied to warts and ulcers, by rubbing it on, with the intent of destroying them.

LADIES' SLIPPER (Cypripedium Parviflorum).

Grows in different portions of our own country, and is marked for its beautiful flowers. The root is the part used. Has been used with marked success in epilepsy and in various other nervous diseases. A decoction is made with two ounces of the root in two pints of water, boiled to one and a half pints. Dose: A tablespoonful four times a day.

LARD (Adeps).

Definition.—Lard is prepared from the fat of the abdomen of the hog. It is washed with water, melted and strained.

Use.—Care must be taken that the lard used does not become rancid. By the addition of benzoin the lard is prevented from undergoing this change. As an application for burns lard may be used as follows: Wash the lard, beat up with an equal quantity of lime water, and add a few drops of oil of bitter almond or carbolic acid. Lard softens and removes scabs.

Manner of Using.—For medicinal purposes the form of lard used is known as benzoinated lard.

THE LEMON IN MEDICINE.

As an Anti-Narcotic.—In poisoning by narcotic substances, as opium, lemon-juice may be administered after the poison has been vomited or removed from the stomach, to counteract the effects.

Asthma.—The administration of tablespoonful doses of lemon-juice in a glassful of any of the mineral waters, three times a day, has been productive of manifestly good results.

As an Antidote in Alkaline Poisoning.—In cases of poisoning by the alkalies the vegetable acids are their antidotes, and the most convenient, easily procurable acidulous substances are, in general, vinegar or lemon-juice.

Biliousness.—The use of lemon-juice, in doses of one or two ounces diluted with hot or cold water, three or four times a day is an invaluable remedy. It is supposed to act as an eliminator of bile.

Corns.—A slice of lemon held in place by bandage over offending hard corn, or placed between the toes for soft corns for several successive days, is an old, well-tried, standard remedy.

Coughs and Colds, Hoarseness.—The following will be found soothing and healing in most ordinary coughs and colds:

Whole flaxseed	2 ounces
Water (boiling)	1 pint
Juice of two lemons.	
Sugar.	

Pour the boiling water on the flaxseed in a suitable vessel, let it steep three hours, pour off the clear liquid, add the lemon-juice and sweeten to taste. Ice it for drinking. Dose, one ounce.

Diphtheritic Sore Throat and Gangrenous Sore Mouth.—Lemon-juice has been used with striking advantage as a local application (gargle and mouth wash) in these diseased conditions; also in other varieties of gangrene from constitutional causes.

Dropsy.—Mild and sustained diaphoreses is entitled to special favor. The skin must be brought into a state of moderate excitement by external warmth—by hot baths twice a day—at same time administering hot lemonade, after which put patient to bed. Free perspiration will follow, and an improvement in the quantity and quality of the urine, and a material subsidence of the dropsy or edema will ensue.

Erysipelas.—In this affection rest, saline laxatives, low diet and cooling drinks are the elements of treatment in mild and simple cases. A very refreshing and agreeable way of prescribing a cooling drink and at the same time obtaining valuable diaphoretic and diuretic effects is by administering the following:

Take one drachm (60 grains) of bicarbonate of potassium and water four fluid ounces. Make a solution, of which add a teaspoonful to a tablespoonful of lemon-juice diluted with a tablespoonful of water and drink during effervescence every three or four hours.

Fevers.—Next to its use as an anti-scorbutic (a cure for scurvy) lemon juice is most valuable as a drink (in febrile affections) in which the thirst is urgent and the bowels are not disordered. This is usually the case in eruptive and periodical fevers.

Headache.—A remedy which may very often be given with advantage for severe forms of headache is bromide of potassium in five- or ten-grain doses twice daily, followed by an ounce or two of effervescing lemonade, as prescribed under La Grippe (which see). If not very severe the effervescing draught (alone) will be found efficient and secure prompt relief.

Hemorrhages.—It not only assuages thirst, but directly counteracts the tendency to loss of blood. Administered as lemonade in one- or two-ounce doses as cold as possible.

Itching of Anus or Scrotum.—Lemon-juice has been used with advantage as a local application in itching of the genitalia (privates) and anus.

Jaundice.—Lemon-juice in tablespoonful doses several times a day is reputed to be a remedy for jaundice produced by congestion of the liver.

La Grippe.—As a mild diaphoretic and as acting on the kidneys, and to allay restlessness and watchfulness in fever use the following:

Lemon-juice and water, equal parts, enough to make four ounces; bicarbonate of potassium one drachm; water, three ounces.

Make and keep in separate solutions. To be mixed in tablespoonful doses several times daily and taken while effervescing.

Rheumatism and Gout.—Lemon-juice has been used with beneficial effects in acute and chronic rheumatic affections. According to the statement of a noted physician, "the sensible operation of the remedy consists in reducing the force and frequency of the pulse, a mitigation of severity of the attack and in securing an early relief from pain."

Prescribed in doses of one or two ounces of juice (freely diluted) three or four times a day. This is generally well tolerated, yet sometimes occasions severe griping or diarrhœa.

Scarlet Fever, Malarial Diseases (Chills and Fever).—Lemon juice furnishes a most agreeable and refreshing beverage and proves an admirable refrigerant.

It may be given with sweetened water in the shape of lemonade. This is an old English remedy, formerly called the "King's Cup," made as follows:

Add two lemons, sliced, and two ounces of sugar to two pints of boiling water, allowing this to digest till cold, when it is ready for use in ounce doses *ad libitum.* Or lemon-juice may be added to the mildly nutritive drinks, such as gum water, Irish moss tea, barley water, and so forth.

Scurvy.—One of the most beneficial applications of lemon is the use of its juice for the prevention and cure of scurvy. For this purpose ships destined for long voyages are always provided with a supply of the concentrated juice or (its equivalent) lime juice; from one to two ounces should be given every two to four hours diluted with an equal amount of water.

Syphilis.—In some cases of syphilis a cachetic or scorbutiform condition of the blood is apt to obtain, and in such fresh lemon-juice several times daily has been found a valuable adjunct to the regular treatment outlined for this disease.

The Lemon is the fruit of the *citrus limonum,* a native tree of India, but now naturalized in all warm climates. It is supposed that the Greeks and Romans were unacquainted with the lemon, which only became known to Europeans at the time of the Crusades. To-day it is known the world over, and its medical uses are numerous.

To Remove Tan from Face.—Rubbing the half of a cut lemon on face at night or bathing the face with lemon-juice, allowing same to dry, and washing it off carefully with castile soap and warm water every morning, is said to have proved very efficacious.

Vomiting.—The effervescing draught given under Erysipelas (which see) is one of the best remedies for allaying nausea or a tendency to sickness.

LICORICE (Glycyrrhiza).

(*See Plate XII.*)

LILY OF THE VALLEY (Convallaria).

(*See Plate X.*)

LIVER-WORT.

A strong tea of this plant, called also kindey plant, in teacupful doses four or five times daily, is recommended as an excellent remedy for kidney complaint.

MALE FERN (Aspidium).

Definition.—Aspidium is the rhizome of plants found in almost every part of the world. The rhizome has a slight odor and a bitter taste.

Use.—Male fern is used in the expulsion of tape worm. It probably kills the worms in addition to expelling them.

Manner of Using.—When it is suspected or known that a person has a tape worm the following treatment should be carried out. The person should either take no food at all for a day or two or the diet should consist of milk only. The drug should then be given in some agreeable form. It may be given in milk or mucilage. A purgative should follow the use of male fern.

MALT (Maltum).

Definition.—Malt is the seed of hordeum distichum, caused to enter the first stage of germination by artificial means and dried. Extract of malt is made with water at a moderate heat and evaporated to the consistency of thick honey.

Use.—Extract of malt is valuable as a food. It is easily assimilated.

Manner of Using.—Extract of malt may be taken alone or it may be taken in conjunction with cod-liver oil, mixing it with an equal quantity of cod-liver oil. Malted milk has become popular as an infant food.

MARSHMALLOW (Althea).

Definition.—Marshmallow represents a root. It contains a substance called asparagin, upon which its virtues depend.

Use.—Asparagin renders the drug useful as a means of increasing the flow of the urine. Combined with medicinal lard althea makes an effective dressing in skin diseases. It has been employed also in cough mixtures.

Manner of Using.—The syrup is taken internally. For making a poultice the powdered root may be used.

MASTERWORT (Imperatoria Obstruthium).

Part used—the root.

It has been used with such beneficial effects as a diuretic, emmenagogue, stomachic and diaphoretic and in such a wide circle of complaints with so much success that it has gained the title of divine remedy. The dose of the infusion, made with an ounce of the root to a pint of water, is a teaspoonful every three or four hours.

MAY APPLE (Podophyllum).

Podophyllum is a slow cathartic acting upon the liver and the intestinal glands. On account of the smallness of the dose and the slight taste podophyllum is much used in the treatment of constipation of children. A grain may be dissolved in the spirit of ginger and a drop or two given on sugar.

MEADOW SAFFRON (Colchicum).

Definition.—Colchicum represents the corm and seed of a plant.

Use.—The chief use of colchicum is internally in the treatment of rheumatism.

MUSK-ROOT (Sumbul).

Part used—the root.

The virtues appear to be those of a nervous stimulant. It has been used with asserted success in diarrhœa, dysentery and malignant cholera; also in gastric spasm, hysteria, painful menstruation, palsy of the limbs, epilepsy and other nervous disorders. It may be given in infusion or decoction, and may be used very much as we use valerian.

MYRRH (Myrrha).

Definition.—Myrrh is a resinous exudation obtained from a tree. It appears as brownish-red masses.

Use.—Myrrh is slightly astringent and stimulant locally, hence its use as a mouth wash. Combined with other remedies it is sometimes employed as a cough medicine.

NAVY BEAN (Vicia Vulgaris).

A smooth, green bark. Yellow flowers and pods containing the beans are the parts employed. As a remedy for erysipelas it has gained quite a reputation on account of successful cures. It is used both externally and internally. For internal use about one ounce of the dried bark is boiled with one pint of water. Dose: One tablespoonful three times a day. It is a most cooling medicine to the system. For external use a paste is made with the bruised beans and applied to the erysipelatous parts. It rarely fails to relieve all inflammatory symptoms.

NUTGALL (Galla).

(*See Gallic Acid.*)

NUTMEG (Myristica).

Definition.—Nutmeg is the seed of a tree growing in the East Indies, but cultivated also in the West Indies and in South America.

Use.—Internally small doses favor digestion by stimulating the secretion of the gastric juice. It is used to disguise the taste of unpleasant mixtures and as a flavor.

Manner of Using.—The oil or the spirits may be used.

OATS (Avena).

Avena is the fruit of the avena sativa and is used as food in the form of oatmeal, gruel or porridge. It is a highly nutritious food and should be eaten with butter or cream. Skin eruptions, such as eczema, have been attributed to the use of oatmeal. Change of diet in these cases produces a cure for the eczema.

OLIVE OIL.

Olive oil is both a food and a medicine. Its nutritive powers are considerable and it acts as a lubricant of the digestive tract. It may also be used externally in numerous ways. It is not to be considered as a cure-all nor should it be taken in excessive quantities as it imposes extra work upon the liver and may cause biliousness, but used in moderate quantities it has the effect of generally aiding the digestive organs in their work. It is recognized as being an especially effective remedy for gall stones. It is also of considerable value to those who are troubled with constipation, its lubricating qualities making it a healthful and natural regulator. Prospective mothers are almost invariably troubled with constipation; ordinary purgatives are irritant and are often dangerous at this period. A fairly free use of olive oil internally at this time combined with external use in the way of rubbing the abdomen will be found not only to give relief in the matter of constipation but will give an elasticity to the skin which enables it to stretch in such manner that scarring of the skin which so often accompanies maternity, is avoided.

As to the quantity one should take internally this depends upon the individual and also the general diet. Two or three tablespoonfuls per day will generally prove a satisfactory allowance, but those who are fond of it may double this quantity or more. It may be taken before, with or after meals or between meals, according to individual preferences. Larger quantities may naturally be taken where considerable acid fruit is included with the diet than in cases where such fruit is omitted. For those who do not like the taste of the oil it may usually be made palatable by adding a little lemon or other acid fruit juice, or by adding a pinch of salt.

Olive oil has been found of much value as a preventive of appendicitis, and for such purposes may be used advantageously both internally and externally. A few drops in the nose when suffering from cold will soften scabs and have general healing effect. It is also of value in enemas. Used externally it affords relief from aching joints and rheumatic conditions. It is of value for chapped skin and may be used advantageously in rubbing the whole body after a warm bath. In its natural form, however, it is inclined to darken the skin and to avoid this the coloring pigment should be removed by bleaching the oil through exposure to sunshine.

Swimmers find that by thoroughly rubbing the body with olive oil before entering the water, they are enabled to endure much greater cold and withstand fatigue in swimming long distances. It is said to promote the growth of hair, but whether this be so or not, it in any event makes an excellent treatment for the scalp, keeping it in healthy condition.

ONION.

Hardly any plant furnishes more or better home remedies than the onion. Cooked as a sauce and eaten freely it is a cure for constipation. Cut into slices and sprinkled with sugar, a syrup is formed which is excellent in croup, the dose being a teaspoonful every fifteen to twenty minutes, till relief is had. A crushed onion poultice will extract the heat and pain of a burn or scald. The squeezed juice of the onion, mixed with sugar, and given in teaspoonful doses every three or four hours, is highly recommended as a cure for bronchitis.

Boiled and mixed with flaxseed meal and a little vinegar it makes an excellent poultice which, placed across the chest and under the armpits, has been found efficacious in pneumonia. Raw sliced onions placed in a sleeping room where diphtheria, scarlet fever or other contagious disease is present, seem to act as a magnet in drawing the germs of disease. Onion syrup, prepared by sprinkling sliced onions with sugar, and taken in teasponful doses every fifteen minutes, until relief is obtained, is a favorite home remedy for croup. Free use of onions on the table is a preventive of constipation. An application of crushed onions to burns extracts the fire and relieves the pain. In bronchial affections onions afford a remedy, in the form of a syrup taken in teaspoonful doses, three or four times a day, or oftener if the case be severe.

OPIUM (Opium).

(*See Plate IX.*)

ORANGE (Aurantium).

Definition.—The orange represents the fruit of small trees which grow in warm regions of the Eastern and Western Hemispheres. There are two forms, the sweet orange and the bitter orange.

Use.—Like the juice of the lemon, orange juice may be taken in water as a cool drink, and is grateful particularly during the course of fevers. The different preparations of orange are pleasant as flavors. The preparation known as the elixir of orange is an agreeable vehicle for other remedies.

OREGON WILD GRAPE (Berberis Aquafolium).

Where the root cannot be obtained, the fluid extract, which is known as *Berberis Aquafolium,* may be purchased from druggists, the dose being one-half teaspoonful in water three times a day in Leucorrhea and also it is recommended as a douche, one teaspoonful in a cup of water being thus used night and morning.

PEACH LEAVES (Amygdalus Persica).

Physicians who have tried the virtues of peach leaves as a cure for jaundice speak of them with praise. Steep a handful of the bruised leaves or twigs in enough cold water to cover them. The dose is a fourth of a teacupful three or four times daily. A tea made of peach leaves or bark is purgative and good for worms. It should be given in tablespoonful doses to adults, until it operates. Children should take teaspoonful doses. In two to four tablespoonful doses every two hours it will check the the vomiting in cholera morbus and morning sickness.

PENNYROYAL (Hedeoma-Hedeoma).

(*See Plate IX.*)

PEPPER, BLACK PEPPER (Piper).

Definition.—Pepper is the unripe fruit of the piper nigra of India.

Use.—Pepper is a condiment. It is stimulating to the digestive system and to the circulation. Pepper externally is an irritant.

PEPPERMINT.

Essence of peppermint, a teaspoonful to a tumbler of hot water, sipped occasionally, is both a preventive and cure of seasickness. Bruised and applied to the stomach it relieves nausea and vomiting. Given internally it relieves colic in infants.

PEPSIN (Pepsinum).

Definition.—Pepsin is one of the elements of the gastric juice. In cases of deficiency of this element there is presented one form of dyspepsia. The object, then, is to assist nature by replacing the pepsin. We therefor look to the lower animals for assistance and select the hog, calf or the sheep. The acid mucous secretion is scraped from the surface of the stomach, spread on a glass and dried in scales. Saccharated pepsin is pepsin obtained from the gastric mucous membrane of the hog mixed with sugar of milk. It is a white powder of a disagreeable odor and taste. A solution of this is made and forms liquor pepsin.

Manner of Using.—The powder may be used, or a rather pleasant liquid preparation called the wine of pepsin may be used.

PERUVIAN BARK (Cinchona).

Uses.—This drug has somewhat lost its former popularity, being replaced by quinine and other alkaloids obtained from the same bark. These alkaloids are the best vegetable tonic, as also the surest remedies in malaria. Quinine is also much used in fevers and inflammations. Many have a certain objection to this drug because an excess causes headache, noise in the ears and other disagreeable symptoms. These are, however, temporary, and should not stand in the way of a careful use of the remedy.

PINEAPPLE.

A tablespoonful of the juice of the pineapple, taken every three hours, is recommended as soothing in sore throat. The same may be used as a gargle after each dose.

PINK ROOT.

This plant offers an old standby for worms. An ounce of the root, mixed with four drachms of senna, should be steeped in a quart of water. The dose is two tablespoonfuls twice a day. If the root is used in the form of a powder; the dose is ten to twenty grains for children, and one to two teaspoonfuls for adults.

POISON NUT (Nux Vomica).

Definition.—Nux vomica is the seed of the strychnos nux vomica of East Indies. The seeds are disk-shaped, about an inch in diameter, and covered with silky hairs.

Use.—Nux vomica is one of our best tonics, as also one of the most dangerous poisons. These properties principally belong to strychnine, an alkaloid. It is also a good bitter tonic, which property is especially efficacious in the nervous system. It is often used in the treatment of dyspepsia.

Manner of Using.—The tincture of nux vomica is the preparation usually employed. Strychnine is used advisedly.

POTATO AS A CURE FOR ACHES AND PAINS.

Recent discoveries indicate that the common potato contains properties which, if properly applied, may relieve a number of aches and pains.

The medicinal properties of the potato are contained in its juice, and it is claimed on high medical authority that this juice produces wonderful results in curing swellings and other disordered conditions of the joints and muscles. In connection with the joints of the body there is to be found a fluid known as "synovia," which acts as a lubricant, and if through accident or disease this secretion ceases the joints become dry, feverish and painful and are unable to perform their functions. This condition is well illustrated by what is known as "white swelling" of the knee; the gland in the knee through which this lubricant (synovia) supplies the joint having become injured or diseased, the fluid escapes through the tissues and forms a swelling under the skin. Under ordinary treatment the trouble is not only difficult to remove, but even after the swelling has disappeared it is usually a long time before proper secretions are again set into activity and full use of the joint obtained. Among other instances where the stoppage of the flow of this fluid causes pain and trouble, may be mentioned gout, where the secretion is lacking in the great toe, and lumbago where there has been a cessation of synovic flow in the lumbar region.

The constituent parts of the potato are chiefly starch and potash salts, the curative properties being contained in the potash salts, which are found in the liquid part of the raw potato. Owing to its dense character, considerable pressure is necessary to extract the potato juice; after extraction it must be boiled down to about one-fifth of its original bulk; a small quantity of glycerine is then added as a preservative, in which form it may be used as a liniment or, with a mixture of lard, may be used as an ointment. The juice may be thus prepared at home or can be prepared by any druggist, the pharmaceutical name being *extractum solani liquidum.* The preparation is only used externally, being rubbed over the affected joints or muscles. Before application, hot fomentations should be applied to thoroughly open the pores, being continued until the skin is thoroughly red; the liniment or ointment is then well rubbed in, and in the case of a joint, a protective bandage is applied. This operation should be repeated every three hours until the pain and swelling are relieved. In cases of lumbago the patient should rest in bed until the remedy has had full effect. A sprained ankle or wrist should be kept tightly bandaged for a few days over an application of the ointment.

It is claimed that thus applied, not only does the potato juice quickly relieves pain, but that it so thoroughly re-establishes the synovic flow that normal condition of the part is so completely secured that there is little likelihood of recurrence of the trouble.

PUMPKIN (Curcurbita Pepo).

The seeds of the pumpkin afford a well recognized remedy for worms, retention of urine and inflammation of bladder and bowels. Oil of the seeds operates as a speedy diuretic in doses of from six to ten drops four or five times a day. If a tea of the seeds be used as a diuretic, it may be drank freely at intervals of two to three hours. Pumpkin seeds are highly recommended for the destruction and removal of tapeworm. The seeds should be peeled and beaten in with sugar till a paste is formed. Then dilute with milk, and drink freely, always on an empty stomach. In the course of a few hours the patient should take an active cathartic for the removal of the tapeworm, composed of a tablespoonful of castor oil and a teaspoonful of turpentine. The drug-stores now furnish a fluid extract of pumpkin seeds for the destruction of tapeworm, the dose being from a half to a whole tablespoonful every three or four hours, followed, as before mentioned, by a large dose of castor oil and turpentine.

PURPLE WILLOW HERB (Lythrum Salicaria).

Part used—the bark and root.

It is demulcent and astringent, and is efficacious in diarrhœa and chronic dysentery. The dose of the powdered bark is about a teaspoonful two or three times a day. A decoction of the root is prepared by boiling an ounce in a pint of water and given in doses of a tablespoonful every two or three hours.

RED PEPPER.

Red pepper is employed with great success as a gargle in scarlet fever. It is prepared by taking half a teaspoonful of the pepper and one tablespoonful of table salt to a half-pint of boiling water. Thoroughly mix and strain, and then add about half a teacupful of vinegar. Use frequently as a throat gargle, and give internally half a teaspoonful every hour to a child, doubling the amount for an adult. Red pepper is also recommended as a cure for the grippe, in the form of a tea of the pod, or of the ground pepper, a teaspoonful to half a pint of water. Place a teaspoonful of the tea in a glass of hot water, and drink slowly every three or four hours.

RED ROOT (Ceanothus Americanus).

A small, indigenous shrub, growing in the United States. The root is the part employed. Said to be useful in syphilitic complaints; given in the form of decoction; two drachms of the root to a pint of water. Dose: A teaspoonful four times a day. A strong infusion is useful in aphthous ulcers of the mouth, applied locally several times a day.

RHUBARB (Rheum).

Definition.—Rhubarb represents the root of a plant native in Asia.

Use.—In moderate doses rhubarb acts as a purgative and stomachic. In chronic constipation it is an excellent remedy. It is useful in the summer diarrhœa of children.

Manner of Using.—The aromatic syrup is a favorite method of administration. It may be given also in the form of pills.

SALT IN MEDICINE.

As Worm Cure.—For this purpose it is administered in large doses by the mouth, or, when the worms are lodged in the rectum, a strong solution is administered in the form of an enema.

Catarrh.—A warm, weak solution of salt and water (a half to one teaspoonful of salt to a tumblerful of warm water) sniffed up the nose night and morning oftentimes leads to a speedy cure in mild cases.

Cholera Morbus.—Salt solution by the mouth and as enemata is strongly recommended for this disease.

Diarrhœa and Dysentery.—In these affections salt has been satisfactorily administered in combination with lemon juice. A half drachm of salt to a tablespoonful or two of lemon-juice diluted, and repeated every two hours till relieved.

Emetic.—To produce vomiting the dose of salt is one or two tablespoonfuls in a tumblerful of water. A teaspoonful of mustard flour assists its action.

Felon.—Take common salt, roast it on a hot stove till dry as possible. Take a teaspoonful of it, also a teaspoonful of pulverized castile soap and a teaspoonful of Venice turpentine; mix them well into a poultice and apply to the felon. Renew twice daily, and in four or five days the felon will open, release the pent-up matter and get well.

Fits, Apoplexy, Convulsions, and so forth.—Salt placed on tongue dry acts admirably in these affections.

For External Application.—Salt is used for various external applications. Thus, a saturated solution, applied with friction, is employed as a counter-irritant in glandular enlargements and chronic diseases of the joints.

General Administration.—Common salt in small doses acts as a stimulant tonic and anthelmintic or worm cure; in larger ones as a purgative and emetic. It certainly promotes digestion, and the most universal animal appetency for it proves it to be a salutary stimulus in health. When taken in larger quantities than usual with food it is useful in some forms of dyspepsia, and, by giving greater tone to the digestive organs in weakly children, may correct the disposition to generate worms. On the sudden occurrence of hemoptysis or vomiting of blood it is usefully resorted to as an astringent in the dose of a teaspoonful, taken dry, and often proves successful in stopping the flow of blood.

Heartburn.—A few grains of table salt allowed to dissolve in the mouth and frequently repeated will ensure prompt relief.

Hemorrhage.—On the sudden occurrence of bleeding or vomiting of blood it is usefully resorted to to stop the flow, in the dose of a teaspoonful, taken dry.

History.—Salt is a necessary and indispensable seasoning of our food, and as such must doubtless have been known to and employed by the first individuals of our race. The earliest notice of it occurs in the writings of Moses (Genesis xix. 26; Leviticus ii. 13) and Homer (Iliad, lib., ix. 214). It has received various names, such as common salt, culinary salt and chloride of sodium, and so forth.

Hives.—Ordinary salt baths are of great value, promptly relieving the terrible itching. Two ounces of salt are added to about thirty gallons of warm water.

Inward Uses.—It is frequently used as an ingredient in stimulating enemata. The dose, as a tonic, is from ten grains to a drachm; as a cathartic, though seldom used for that purpose, from two drachms to half an ounce. In doses of from half an ounce to an ounce, dissolved in four or five times its weight of water, it frequently proves a prompt and efficient emetic, invigorating rather than depressing the powers of the system. When employed as a clyster it may be used in the amount of from one to three tablespoonfuls dissolved in a pint of water.

Local Application.—Externally applied in solution it is a stimulant, and may be used either locally or generally. Locally it is sometimes employed as a fomentation in sprains and bruises; and as a general external application it forms the salt-water bath, a valuable remedy as a tonic and excitant in depraved conditions of the system, occurring especially in children, and supposed to be dependent on the scrofulous diathesis. A pound of salt dissolved in four gallons of water forms a solution of about the strength of sea-water, and suitable for a bath.

Malaria (Ague).—In the course of experiments made in Paris, France, common salt in half-ounce doses has been found very efficient and second only to quinine, but the dose being very bulky causes vomiting in many cases. But the suggestion is a valuable one, where quinine cannot be administered.

Purgative.—For producing evacuations from the bowels it is employed in the form of an enema. One or two tablespoonfuls of common salt dissolved in a pint or quart of starch water forms a very useful clyster.

Salt and the Blood.—It serves some important and essential uses in the animal economy. It is employed by the people of all nations, from the most refined to the most barbarous. It is an invariable constituent of the healthy blood.

In moderate quantities it promotes the appetite, assists digestion and assimilation.

Salt a Tonic.—In some diseases the moderate use of salt produces the effect of a tonic. It acts as a stimulant to the mucous membranes, the absorbent vessels and glands.

Sore Eyes.—A small pinch of salt (about three grains) added to an ounce of clear, filtered, boiled water makes a very soothing and beneficial eye-lotion. Apply with a small tube or dropper several times daily.

Sore Throat.—Gargling the throat with a weak solution of salt and water will often cure this difficulty without further treatment.

Sprains and Bruises.—Half fill a bottle with common salt; add good brandy till nearly full. Shake it well and allow to settle. Bathe the part with a soft linen cloth or sponge.

Stimulant.—As a stimulant it is rubbed on the chest in fainting, and so forth.

Stomach Pains or Gastrodynia.—Salt in a teaspoonful dose, dry, is used in some cases with considerable advantage.

Toothache Cure, Infallible.—Pulverize and mix alum and common salt in equal quantities; wet a small piece of cotton and cause the mixture to adhere to it; place in the hollow tooth. A sensation of coldness will be first produced, which will gradually subside and with it the tormenting toothache.

NEW SALT REMEDY FOR SUNSTROKE.

Symptoms.—Throbbing in head, violent thirst, great restlessness; headache and fullness as if head would burst; red face, increased action of heart.

In extreme cases of sunstroke, where the patient is often in an unconscious condition, with a very weak, rapid pulse, and at times almost imperceptible, the injection under the skin of the forearm of a sterilized salt solution into the vein has been found most efficacious, and has been the means of saving many patients when the temperature has reached 109¾.

Treatment.—A vein of the arm is opened precisely as in the manner for bleeding, and a solution made by approximating one teaspoonful of common salt dissolved in one quart of water. This solution to be of the temperature of the blood, viz.: 98⅖ Fahrenheit.

By pursuing this treatment the blood-vessels are filled, the rapid action of the heart diminished, pulse becomes stronger and regular, and in association with the regulated cold bath or cold applications to the surface of the body, consciousness is restored within a very few hours. Care should be taken that the treatment, especially the cold bath, is not applied to cases of heat exhaustion, where the temperature is frequently subnormal. There is no doubt but what this recently instituted treatment by salt injections has been the means of saving many patients who have been affected with sunstroke. In sunstroke the fluid in the blood-vessels being below the normal quantity, the salt injection takes the place of the lost pabulum.

SARSAPARILLA (Sarsaparilla).

Definition.—Sarsaparilla represents a root from Mexico, Central America and Brazil.

Use.—Sarsaparilla is an alterative. It is also a vehicle to disguise the taste of unpleasant drugs.

SENNA OR SENA (Sena).

Use.—A violent cathartic, with watery stools, having the disadvantage that it is apt to produce strong colic. Generally given with some aromatic. The most pleasant form is the preparation known under the name of compound licorice powder.

SKULLCAP (Scutellaria Lateriflora).

Part used—the leaves.

Very efficacious as a nervine and successfully employed in neuralgic and convulsive affections, St. Vitus' dance, delirium tremens and nervous exhaustion. An infusion of the dried leaves is made with half an ounce of the leaves to a teacupful of water, to be drunk during the day. It has been found useful in epilepsy.

Description.—Its stem is erect, smooth and one or two feet high. The leaves are rather acute, opposite and supported upon long petioles. The flowers are small and of a pale blue color.

SOAPWORT (Saponaria Officinalis).

Part used—the root and leaves.

It has been used in venereal and scrofulous affections, cutaneous eruptions, and so forth. It appears to act as an alterative like sarsaparilla. It is given in the form of a decoction which may be taken freely. The expressed juice given in the quantity of half an ounce in the course of a day is claimed to be a specific in the cure of gonorrhœa.

Description.—The root and leaves are inodorous, of a bitterish-sweetish taste. They impart to water the property of forming a lather when agitated, like a solution of soap, whence the name of the plant was derived.

SPANISH FLIES (Cantharis Cantharides).

Definition.—Spanish flies represent the dried body of a beetle found in the South of Europe, especially in Spain.

Use.—Internally cantharides is a stimulant to the genito-urinary tract and externally it is employed as a counter-irritant. The tincture of cantharides combined with other remedies is often used in the treatment of alopecia or baldness.

Manner of Using.—When a blister is employed the part may be painted with cantharidal collodion or it may be covered with a rag spread with the cerate. Cantharides requires from six to ten hours to draw a blister, but it is better to remove the drug at the end of four or five hours.

STARCH (Amylum).

Definition.—Starch is a fine white powder, and is obtained from the seed of the zea mays. It forms a large part of rice, wheat and barley.

Use.—When boiling water is added to starch a very convenient poultice is furnished for local inflammations. Starch, when mixed with water, is a convenient antidote to most corrosive poisons, as it is usually close at hand or can be readily obtained.

Manner of Using.—Starch may be used locally or internally. It may also be used as the basis for an enema to be injected in the bowels.

STONE ROOT (Collinsonia Canadensis).

(See Plate I.)

This plant is used in numerous complaints in practice. A decoction of the fresh root, one ounce to the pint of water, has been used with advantage in hemorrhoids or piles, catarrh of the bladder, gravel and dropsy. The dose is one tablespoonful four times a day. The leaves are applied in the form of fomentation to wounds, bruises and sores, and in cases of internal abdominal pains.

SUGAR (Saccharum).

Definition.—Sugar is a product of the sugar-cane of sub-tropical countries.

Use.—Syrup which is used as a vehicle for the administration of drugs consists of 85 per cent. of sugar. Sugar of milk is a peculiar crystalline sugar obtained from the whey of cow's milk by evaporation and purified by recrystallization. It is used in pharmacy.

SWEET FERN (Comptonia Asplenifolia).

A shrubby plant. Grows in thin, sandy woods in New England. The root is the part used. Most useful in diarrhœa. Given in the form of decoction. Made with two ounces of the root, boiled in one and a half pints of water to a pint. Dose: A tablespoonful several times a day, as required.

TANNIC ACID (Acidum Tannicum).

Definition.—Tannic acid occurs in the form of pale yellow scales.

Use.—The chief effect of tannic acid is that of an astringent contracting the tissues and checking secretion. It is used as a chemical antidote in cases of poisoning.

Manner of Using.—As an antidote it is used in powder form, twenty grains being the amount usually given.

TARTARIC ACID (Acidum Tartaricum).

Definition.—Tartaric acid appears as colorless crystals. It is obtained by the decomposition of cream of tartar found in old wine casks.

Use.—This acid is one of the constituents of a Seidlitz powder, which is laxative in its effect. Rochelle salt, also laxative, is potassium and sodium tartrate.

Manner of Using.—The acid or its salts are used in solution in quantities to suit.

TEA (Camellia).

Definition.—This represents an infusion made from the dried leaves of the Chinese tea plant or Camellia Thea. It contains a substance known as theine.

Use.—Tea is a stimulant removing a sense of fatigue. While this is the ordinary effect of the use of tea there are some, particularly those of a nervous temperament, who cannot partake of it without ill effects.

TOBACCO (Tabacum).

Definition.—The leaves of the tobacco plant represent the part used. The tobacco plant is indigenous to the southern portions of this country. It was carried to Lisbon by the Spaniards and from there to France by Nicot in 1560.

Use.—When persons not accustomed to tobacco indulge in it emesis or vomiting, with great muscular relaxation, results. It is a stimulant to the salivary and intestinal secretions. Nicotine is a rapidly acting poison resembling hydrocyanic acid in its fatal effects. The power of increasing secretions along the alimentary canal, the stimulation of peristalsis and the function of the kidney are proper arguments in favor of moderate use of tobacco.

TOMATOES (Lycopersicum Esculentum).

The tomato remedy for cholera infantum meets with much favor by those who have tried it. It is prepared by adding sugar to peeled ripe tomatoes. The dose is a teaspoonful every half hour until relieved; then continue with like doses every two or three hours till a permanent cure is effected. Some remarkable cures are mentioned in connection with this simple remedy. Do not give the seed or pulp of the tomato.

TRAILING ARBUTUS (Epigæ Repens).

A small, trailing plant, ovate leaves and small, fragrant flowers. It has been employed with marked success in diseases of the urinary organs and of the pelvic viscera generally. The leaves and stems are the parts used. An infusion is made with two ounces of either to one and a half pints of water, boiled to one pint. Dose: A tablespoonful three or four times a day.

TURPENTINE TREE.

This species of pine yields the oil and spirits of turpentine so useful in the cure of diseases. Application to the back of the neck of a cloth thoroughly wetted with spirits of turpentine will afford speedy relief in cases of fits and convulsions. Five drops of the spirits on a little sugar, swallowed slowly, and once or twice a day will cure sore throat. In cases of dysentery, ten drops on a little sugar taken every four hours usually effects a cure. A turpentine liniment, valuable in cases of sprains, bruises and rheumatism, is made of equal parts of spirits of turpentine and vinegar, to which has been added the yolk of one egg.

UNICORN ROOT.

This is sometimes called star-root. It ranks as an excellent remedy for falling of the womb. Make it into a strong tea, and take half a teaspoonful three times a day.

VALERIAN (Valeriana).

(*See Plate XIV.*)

WAHOO (Euonymus Atropurpureus).

Small shrub, which, in autumn, from their rich red color, have obtained for them the name of burning bush. Most effective in the different forms of dropsy. The root is the part employed. Given in the form of decoction, one ounce to the pint of water. Dose: A wineglassful three or four times a day.

WALL PELLITORY (Parietaria Officinalis).

Part used—the bark.

It is used in complaints of the urinary passages, dropsy and febrile affections in the form of a decoction made with an ounce of the bark to a pint of water, the dose of which is a tablespoonful every three or four hours. The expressed juice is also used and the fresh plant applied in the form of a poultice to painful tumors.

WATER HEMLOCK (Phellandrium Aquaticum).

Part used—the seeds.

They have been used moist successfully in chronic pectoral affections, such as bronchitis, pulmonary consumption, asthma, and so forth, and in dyspepsia and intermittent fever. The dose is from five to six grains every three or four hours.

Description.—The seeds have been used for a considerable time in the treatment of disease. They are from a line to a line and a half in length, narrow above, somewhat compressed, marked with ten delicate ribs. Their color is yellowish brown, the odor strong, their taste acrid and aromatic. In over-doses they produce vertigo, intoxication and other narcotic effects.

WAX (Cera).

Wax is a concrete substance prepared by the apis mellifica. It forms the honeycomb. It is used to give consistency to ointments and suppositories.

WHITE MUSTARD (Sinapis Alba).

(*See Plate V.*)

WHITE OAK BARK.

It has been used successfully to cure the leucorrhea or whites. Boil an ounce of the root in a pint and a half of water down to a pint. Use as an injection.

Or, employ as an injection one-half ounce of the fluid extract of Canadian pine (*Pinus Canadensis*) to a pint of tepid water. Use this twice a day with a syringe, or white oak bark one ounce to a pint.

WHITE POND LILY.

A tea of this plant injected to the neck of the womb is highly recommended as a cure for ulceration of that organ. At the same time the tea should be taken internally as an accessory treatment, the dose being half a teacupful two or three times daily. If the fluid extract of the plant is used. the dose should range from four to twenty drops three times a day.

WILD INDIGO (Baptisia Tinctoria).

Part used—the root.

It has proved useful in scarlet fever, typhus fever and in that state of the system which attends gangrene or mortification. It is highly recommended as an external application to obstinate and painful ulcers. It is given in decoction made in the proportion of an ounce of the root to a pint of water, of which two tablespoonfuls are administered every four or eight hours.

WILD YAM.

This plant has come into modern favor as a remedy for appendicitis. It is used by mixing a teaspoonful of the extract in a half tumbler of water, and taking a teaspoonful of the mixture every half hour. When relief comes diminish the dose to once every hour or two. This treatment is regarded by some doctors as the best the profession affords.

WINTERGREEN TEA BERRY (Gaultheria).

Definition.—Wintergreen represents the leaves of a small plant growing in North America.

Use.—Taken internally the oil is antiseptic and antipyretic. This latter refers to its property of reducing the temperature. It is used in the treatment of articular or inflammatory rheumatism. Locally the oil combined with olive oil makes a good application for rheumatic pains.

Manner of Using.—The oil is used internally and locally.

WORMSEED (Santonici Semen).

Part used—the seeds.

They contain a volatile oil, to which its virtues have been ascribed. But it owes its efficacy to a peculiar principle which it contains called santonin, used in the treatment of worms. The dose is from one to four grains twice a day. The dose of the powdered seeds is from ten to thirty grains, which should be repeated morning and evening for several days and then followed by a brisk cathartic. It has also been employed with success in intermittent fever.

YELLOW ROOT (Hydrastis Canadensis).

Part used—the root.

Possesses the virtues of the ordinary bitters and popularly employed as a tonic. Used in dyspepsia and stomach affections, and as a topical application to ulcers and sores in the form of a decoction made with a drachm of the dried root to a pint of water and a syringeful injected three times a day. It is most useful in gonorrhœa.

YERBA REUMA.

Fluid extract of yerba reuma is a favorite cure for catarrhal affections. It is used by pouring a small quantity of the liquid into the hollow of the hand, placing the finger on one nostril and sniffing the liquid into the other nostril. Then do the same with the other nostril. This should be repeated four or five times daily. If the catarrhal discharge is copious, the nostrils should first be cleansed by previous sniffs of warm water; and if the discharge be offensive a half teaspoonful of carbolic acid may be added to the water.

HOW TO PRESERVE HERBS.

When a plant has reached the stage of its growth when all its properties are fullest it is the proper time to gather it.

Roots.—The best time to gather roots is before the sap rises in the spring, but they may be taken after the leaves have dried in the fall.

Barks.—Gather in the fall or early spring, and, after removing the outside portion of the bark, cut and put in a dry place.

Berries and Fruits.—Hang in a cool, dry place or spread on tables or shelves.

Seeds and Flowers.—When they have fully ripened, place to dry in a shady place.

Medical Herbs.—Gather any time while blooming, before the autumn frosts, and dry in the shade.

Leaves.—Should be collected when the bloom is on the plant, and hung or spread in a current of air so as to be hastily dried.

All druggists know that tin canisters are the best in which to keep powders, where they can be dry and in a dark place roots in barrels or wooden cases and extracts and tinctures in jars and bottles away from the light.

How to Prepare Herbs for Use.—To make an effusion or decoction, take one to two ounces of the plant, bruise, and add a quart of water. Tinctures are made by taking two ounces of the powdered article and adding a quart of alcohol and letting stand two weeks. Essences are made by dissolving one to two ounces of the essential oils in a quart of alcohol. Infusions or teas are made by taking a half cupful of the herb and allowing to simmer slowly over the fire. Decoctions are made in the same way, only make sure to extract the full strength from the herb.

HOW TO MAKE TINCTURES.

Tinctures, in the pharmaceutical sense of the term, are solutions of medical substances in alcohol or diluted alcohol, prepared by maceration, digestion or percolation.

Only Dry Ingredients.—In the preparation of the tinctures the medicine should be in the dry state, and properly comminuted by being bruised, sliced or pulverized. It is usually better in the condition of a coarse than of a very fine powder, as in the latter it is apt to agglutinate, and this presents an impediment to the penetration of the menstruum.

The Mixing.—When several substances differing in solubility are employed they should be added successively to the splint; those least soluble first, those most so last, as otherwise the menstruum might become saturated with the ingredient for which it has the strongest affinity, and thus be rendered incapable of dissolving a due portion of the others.

The Care Needed.—Care should always be taken to keep the vessels well stopped in order to prevent the evaporating of the alcohol. The materials should be frequently shaken during the digestion or maceration, and this caution is especially necessary when the substance acted on is in the state of powder. The tincture should not be used until the maceration is completed, when it should be separated from the dregs either by simply filtering it through paper, or, when force is requisite, by first expressing it through linen, and subsequently filtering.

Narcotic Tinctures.—Tinctures prepared by adding alcohol to the expressed juices of plants have been long in use. The tinctures of some of the narcotic plants, as those of conium, hyoscyamus and belladonna, are prepared in this manner. To the expressed juice, after it has stood twenty-four hours and deposited its feculent matter, alcohol of .0838 is to be added in the proportion of one part by measure to four of the juice, and after another period of twenty-four hours the liquor is to be filtered. This proportion of alcohol is sufficient for the preservation of the juice, while it causes the precipitation of the mucilaginous matter. But, though these preserved juices are often energetic preparations, yet it is obvious the tinctures prepared from the fresh plant must be still more efficient, as they contain necessarily not only the soluble active matter of the juice but that also which is left in the solid residue of the plant.

Keeping of Tinctures.—Tinctures should be kept in bottles well stoppered in order to prevent evaporation, which, in some instances, might be attended with serious inconvenience, by increasing their strength beyond the official standard.

Doses of Tinctures.—Medicines are most conveniently administered in tinctures which act in small doses, as the proportion of alcohol in which they are dissolved is insufficient to produce an appreciable effect. Those which must be given in large doses should be cautiously employed in this form lest the injury done by the menstruum should more than counterbalance their beneficial operation. This remark is particularly applicable to chronic cases, in which the use of tinctures is apt to lead to the formation of habits of intemperance.

HOW TO MAKE FOMENTATIONS.

A sort of partial bathing by the application of cloths which have been previously dipped in hot water or in some medicated decoction. They act chiefly by virtue of their warmth and moisture, except in the case of narcotic fomentations, where some additional effect is obtained.

A Dry Fomentation is a warm, dry application to a part, as a hot brick wrapped in flannel, a bag half filled with chamomile flowers made hot, and so forth.

Fomentation of Herbs.—The herbs ordinarily sold by the apothecary for this purpose are southernwood, poppy heads, chamomile flowers, each two parts; bay leaves, one part. Four ounces of these to six pints of water.

HOW TO MAKE COMPRESSES.

Folded pieces of lint or rag so contrived as, by the aid of a bandage, to make due pressure upon any part, according to their shape, direction and use. Compresses have been called long, square, triangular, split, uniting, cubiform, and so forth.

The compress of the hydropathists is a cloth well wetted with cold water, applied to the surface near the supposed seat of disease, securely covered with a dry cloth, and changed as often as it becomes dry. It is sometimes covered with a layer of oiled silk to prevent evaporation.

HOW TO MAKE DECOCTIONS.

Decoctions are solutions of vegetable principles obtained by boiling the substances containing these principles in water. Decoction is preferred to infusion as a mode of extracting the virtues of plants when the call for the remedy is urgent and the greatest possible activity in the preparation is desirable. The process should be conducted in a covered vessel, so as to confine the vapor over the surface of the liquid, and thus prevent the access of atmospheric air which sometimes exerts an injurious agency upon the active principle. The boiling, moreover, should not as a general rule be long continued, as the ingredients of the vegetable are apt to react on each other, and thus lose to a greater or less extent their original character. The substance should, if dry, be either powdered or well bruised; if fresh, should be sliced, so that it may present an extensive surface to the action of the solvent.

All vegetable substances are not proper objects for decoction. In many the active principle is volatile at a boiling heat, in others it undergoes some change unfavorable to its activity, and in a third set is associated with inefficient or nauseous principles, which, though insoluble or but slightly soluble in cool water, are abundantly extracted by hot liquid at the boiling temperature, and thus injure the preparation. In such cases infusion is preferable to decoction. Besides, by the latter process, more matter is often dissolved than the water can retain, so that upon cooling a precipitation takes place and the liquid is rendered turbid. When the active principle is thus dissolved in excess, the decoction should always be strained while hot, so that the matter which separates on cooling may be mixed again with the fluid by agitation at the time of administering the remedy.

As a general rule glass or earthenware vessels should be preferred, as those made of metal are sometimes corroded by the ingredients of the decoction, which thus becomes contaminated. Decoctions, from the mutual reaction of their constituents as well as from the influence of the air, are apt to spoil in a short time. Hence they should be prepared only when wanted for use, and should not be kept in warm weather for a longer period than forty-eight hours.

BOOK XIV

Treats of Health and Habits. Intemperance of all kinds and its effects are fully discussed and explanations and warnings, in regard to the use of articles of habit and diet, allowed by law, are given.

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Book XIV

HEALTH AND HABITS

INTEMPERANCE—ITS EFFECTS

Use of Alcohol.—The habitual and excessive use of alcoholic beverages is harmful in the extreme to the moral nature. Startling facts corroborate this opinion. They are historic. Realization of this evil prompted our present temperance laws. One result most common is the loss of self-respect. Men addicted to this vice descend to the grossest immoralities. Before the taste and burning desire for liquor was acquired they were decorous and dignified; but, degraded by the demoralizing appetite, they present the most pitiable spectacle of self-humiliation, all moral excellence disowned or lost. Nor is this result common to men of moderate talents or low extraction.

Degrades Genius.—Some of the brightest geniuses have exiled themselves from the social circle of which they were ornaments, or have been banished therefrom, because of their violation of the courtesies and conventionalities of polite life. They have deliberately destroyed that conservative element in human nature on which are based true dignity and manliness.

Destroys Social Affections.—This baneful habit makes fearful inroads on the social affections. Friendships of long standing have been broken up because of the unreasonable exactions on patience and sympathy demanded by the inebriate. Drunken husbands have exercised a tyranny over refined, cultured and amiable wives till, after long years of endurance, the sufferer has gone down broken-hearted to the grave. These are not cases confined to a few families; they are numbered by the thousands.

Crushes Paternal Feeling.—The paternal relation has been made the occasion of untold pain to children who have become under the rule of an intemperate father the heirs of privation, cruelty and neglect. The paternal feeling has gradually been crushed out. There are records of feminine frailty of like character where the mother-instincts have been so far obliterated that one shudders to think of a degradation so abject being possible to the womanly nature.

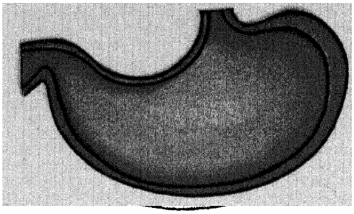
Loss of Ambition.—*Loss of manly ambition* is one of the sad results of this habit. The foe has invaded the precincts of the bar, the senate chamber, the sacred desk, and hurled down to the dust brilliant men, who sacrificed honor, purity, holiness, popular affection and flattering possibilities of wealth and fame at the shrine of this evil. This is a melancholy page in the history of many great names.

Stifles Conscience.—The great moral monitor, *the conscience,* often is made to hush its admonitions and become silent or dead. Acts the most abhorrent to men sober, by men drunk are committed without shame. Inflammed by a species of madness produced by drink, men perpetrate the darkest deeds. In fact, criminals have fortified their failing courage by repeated draughts of liquor to nerve them to the commission of some premeditated crime. Our civil tribunals are tortured with cases which would never be brought into court but for crime committed by men in a state of intoxication. So enormous, so brutal, have been some offenses against the rights of society, and of individuals as well, that serious doubts arise whether the criminal has a conscientious scruple. The wreck of this high moral authority and guide is a sad monument of depravity.

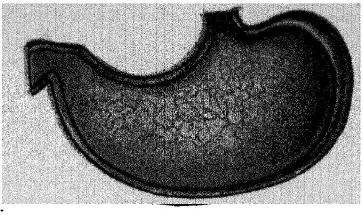
Destroys the Will.—There is another great moral force which is not exempt from the ravages of intemperance—*the will.* This power is the crowning glory of human nature. It is a gift of imperial authority with which man is dowered. When that is enfeebled or destroyed, the creature is unmanned, the sceptre falls from his hands. This regal quality may be enslaved by the vice of intemperance, and then the fate of the unfortunate victim is sealed. There is then no prospect, no promise, of reformation. The farther the victim goes the greater the momentum toward the inevitable doom. The facility of wrong-doing and the tendency grow in a fearful ratio, until he that was a strong man in will-power is enslaved, and is impelled along on the down grade to the last asylum, the grave.

General Evil Effects.—Thus we trace the effects of a habit that has been a problem to physician, philosopher, jurist and minister. It is a question interesting to all students of human nature. The humanitarian is startled at the ruin the evil entails on the moral nature. The philan-

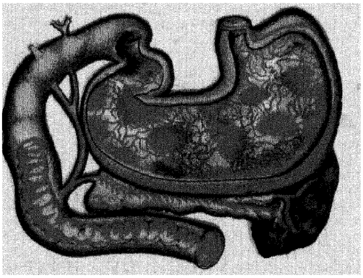
ACTUAL EFFECT OF ALCOHOLIC LIQUORS ON THE HUMAN STOMACH AND INTESTINES.



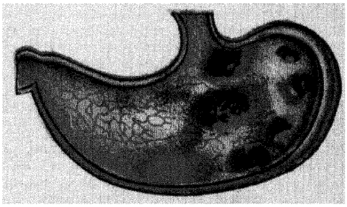
A healthy stomach



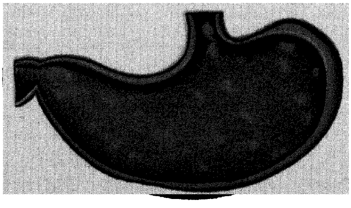
Effect of a few glasses of intoxicants



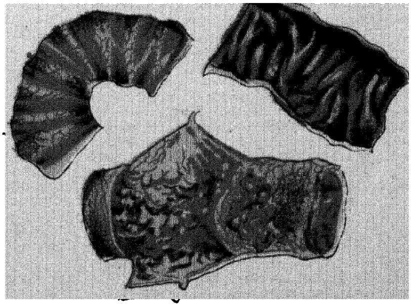
A stomach after ten or fifteen days continuous drinking.



Last stages of an ulcerated stomach of an habitual drinker of intoxicants.



Last stages of delirium tremens



Effect of intemperance on the intestines.

thropist cannot contemplate unmoved the arena of disaster on which scenes so terrible transpire. The ravages of the monster are universal in their extent and complete in their character. The keenest moral sense is deadened, ennobling aspirations are extinguished, moral beauty is eclipsed. Chastity is ridiculed, virtue defamed, honesty despised, honor debased. Passions reign, selfishness is supreme. All excellence loses its lustre. These and many others are the bitter fruits of this appalling evil.

Growth of the Habit.—Young and brilliant minds, noble and generous natures, yield most easily to the pressure of high artificial stimulation. At the beginning of the formation of the habit the effect on body and mind is invigorating and inspiring for a season. Life becomes during, the delusive inflation, a delirium of delight. The victim feels richer, more generous, more genial. The present is radiant and rosy, the future aflame with an aureole of glory. To these ignitable souls drink seems the elixir of life, the fabled nectar of the gods. But at the last, when the chains of habit are riveted, the victim, no longer free but a slave, experiences all the horrors of remorse and self-condemnation. But his will is too enfeebled to break the shackles or resist the wand of the enchantress. He is numbered with that vast army, even now many thousand strong, who annually hasten to that dreary domain where the drunkard's journey ends.

Hereditary Effects.—These unfortunates often leave behind them to their offspring a legacy of mental and moral derangement. If the appetite for strong drink is not directly transmitted to children, it is beyond dispute that such children will inherit a weak disease-resistance, a lax moral stamina with a tendency to crime as well as dissipation. Homicidal and suicidal inclinations, disordered affections, gross impulses appear in children of these parents and constitute the material from which criminals derive their natures. Even if the offspring are only inferior mentally they enter the world under a disadvantage, since today all who would succeed need all the natural resources that heredity can supply.

Other Food Sufficient.—There are those who have never experienced in themselves the dreadful effects of intemperance, having never used intoxicating liquors. The abstinence in these persons—and they are numerous—appears to favor the impression that except in disease no other stimulus is needed for a full mental, moral and physical manhood than that which food, rest, occupation and pure air supply. The moral well-being of the human race would no doubt be best subserved by plain diet, pure emotion and high thought.

TEMPERATE AND INTEMPERATE LIFE CHANCES.

An intemperate person's chance of living is—

At 20 years of age.............. = 15.6 years.
At 30 " " " .... = 13.8 "
At 40 " " " .... = 11.6 "
At 50 " " " .... = 10.8 "
At 60 " " " .... = 8.9 "

A temperate person's chance of living is—

At 20 years of age.............. = 44.2 years.
At 30 " " " .... = 36.6 "
At 40 " " " .... = 28.8 "
At 50 " " " .... = 21.25 "
At 60 " " " .... = 14.285 "

The average duration of life after beginning the habit of intemperance is—

For laboring men, mechanics, etc.	18	years.
For merchants, traders and commercial men	17	"
For professional men	15	"
For females	14	"

EVILS OF ALCOHOLIC BEVERAGES.

Smuggled Liquors.—Before the present prohibitory liquor laws were enacted the evils of the intemperate use of liquor were vast and far-reaching, for excessive drinking has always been intimately associated with poverty, crime and more or less mental degeneracy. These were the deplorable effects when malt and distilled liquors were seldom adulterated and seldom of inferior grade. Since the manufacture and sale of these liquors have been prohibited the liquor now smuggled in is frequently only used as the basis of unlimited adulteration, resulting in the production of a very dangerous beverage. If any remains pure its price has rendered it a most extravagant luxury.

Home Brew.—If this can be said of liquors which have some element of quality in them, how shall we consider the liquor made by crude appliances at home? The home-made beverage, especially that distilled from one of the boiled cereals, is a fiery concoction and dangerous to the health. The ill effects upon the system and digestive organs of those addicted to the use of this so-called "home brew" cannot be overestimated. Its bad results as it acts upon the temper and disposition are only too apparent in the reports of crimes and horrors in the daily press. Many a home has been burned to the ground by a poorly regulated still or liquor-rendering device of the amateur. There is a vast government expense connected with the enforcement of prohibition laws and with no compensation by licenses as was formerly the case. The systematic smuggling of liquors has brought into existence a new element in criminology, the hijacker, or plunderer of the smuggler. Such vast sums of money are represented in many of these operations that rash adventurers are tempted to take possession of rich shipments, in any way possible, for their own exploitation. There is one minor advantage in present conditions: these dangers in the smuggling and handling of illicit liquors tend to cause an advance in their price, therefore, probably, less of the beverage is used than would be the case in other circumstances.

Drinking and Its Reactions.—Long before the prohibitory acts were passed and became law leaders in finance and business refused to employ men who were addicted to the use of liquor, especially in positions in which there might be great responsibility and upon the work of whom the safety of many might depend. Indulgence in the dangerously adulterated and cheaply concocted liquors of the present illegal sort is inimical to health and must eventually cause serious physical complications. To practice their use is to tempt fate by taking great risks with personal health. To attempt their manufacture is not only to run counter to the law and risk a serious penalty, but the attempt to make such inflammable products in exposed places like a home is subjecting one's property to the danger of complete destruction. Whatever may be the attitude of anyone upon the abstract phases of prohibition, all must concede that a disregard of any law, especially one so general as this, has an injurious influence upon the public morale and tends to encourage a spirit of general lawlessness.

Eugenic Side of Illicit Liquor.—The effects upon the next generation, as well as upon the efficiency of this, of a somewhat considerable disregard of the liquor laws in the way of smuggling and private manufacturing, so extensive that many are able to obtain the inferior and deleterious liquor of today, must be of a very serious nature. The children of such parents must inherit a tendency to depravity and ill health, far more dangerous to themselves and the race than ever has been before.

Realizing this fact, the authorities throughout the country are using the strongest repressive measures possible. This requires incessant patrol upon the sea and a wide and active organization upon the land to keep the evil in check. The quest for hidden distilleries, some of which have represented vast expenditure, is ceaseless and the aid of severe penalties is sought to re-enforce the other efforts. The best measures that can be taken are to enlighten and educate the public to understand the evils of secret violation of a law to which they object. All must understand that the health and welfare of the community are involved in the handling and solution of the liquor problem of today.

TOBACCO HABIT AND CURE.

The use of tobacco in one form or another is so universal that to decry its use is apt to meet with well-fought opposition by a large section of the world's inhabitants. Nevertheless there are many and strong arguments against its use. It is true that it has the power of increasing secretions along the alimentary canal, the stimulation of peristalsis and the function of the kidneys when used in moderation, and it is also undeniable that many users of tobacco remain healthy and live to old age. Yet the arguments against its use are many, and those which follow are worthy the consideration of both users and non-users.

Nicotine.—There is no deadlier poison in nature than nicotine. drop or two of nicotine is sufficient to cause death. Like all poisons it is highly stimulating for the instant, soon to be followed by its deathlike effects. It is the peculiar poison which tobacco in any and all of its forms yields. The tobacco chewer, snuff taker, cigar smoker and cigarette addict, no matter what the reason may be for indulgence in the weed, is simply administering poison to the vitals.

Excuse for the Habit. —To be sure, the administration of poison to oneself through the agency of the plug, cigar, cigarette or snuff is not immediately dangerous. Many excuse such unwise administration on the plea that tobacco calms their nerves and conduces to sleep and comfort. Others say it is a sedative that conduces to thought. It is generally supplied to soldiers on the theory that it keeps them contented in camp, enables them to better withstand the fatigue of long marches, and in a limited sense supplies the lack of food. But most, if not all, of these claims are imaginary. They are made, as a rule, by slaves of the habit, and as a justification of their folly.

Tobacco Facts.—The boy or girl who uses tobacco before reaching maturity is sure to wreck the nervous system and take a long step toward idiocy or insanity. Perfect, clean, energetic and capable manhood or womanhood is impossible for a youthful tobacco poisoner. No matter how slow the administration of the poison may be it is relatively quicker in its action than upon older people, because young nerves are the more tender and sensitive, more easily affected. As between the user and non-user of tobacco the latter is preferred every time. The youth who uses tobacco before maturity is his own greatest enemy, and readily ranks as a crass fool.

Adult Tobacco Users.—It is to be doubted whether any sane adult ever deliberately learned the tobacco habit. They either imitate others, lest they appear odd, or the habit has crept insidiously on them. Again, it is to be doubted whether a sane man exists who does not deprecate the habit and wish he were rid of it, and this deprecation exists in spite of the fact that he is ready for excuses for indulging the habit. In this respect tobacco users are open to the charge of inconsistency.

The Force of Habit.—Habit is a hard master, a veritable tyrant. It gloats in its triumphs and laughs while its slave writhes. So tyrannical and brutal is it that, as in the case of alcohol, it causes such degeneracy of tissues and organs as to take rank with actual disease, that of alcoholism. This is in some sense true of the tobacco habit. The difficulty of ridding oneself of it leads to the belief that it really weakens the will-power and those forces which contribute to moral self-control.

Uselessness of the Habit.—No non-user of tobacco ever felt the worse or expressed regret over his abstentation. No user of tobacco ever denied that the habit is—

1st. A filthy one, in that it begets frequent spitting of stained saliva by chewers, sickening smoke odors by smokers, and discharge of discolored mucus by snuffers. Add to this the disgustingly odorous smoke of the cigarette user, and then wonder what worse in the way of filth can be realized.

2d. No matter what the natural constitution or the excuse, the habit is a dangerous one. It grows by what it feeds upon, and leads to gradual and insidious wreckage of the finer sensibilities and active nerve forces.

3d. It is an expensive habit, often entailing poverty, and always diminishing the recompense of labor. In the families of those who earn meager support its expensiveness is almost the equivalent of robbery of wife and children. Destitution lies in the wake of tobacco almost as surely as in that of alcohol.

4th. It is an inconvenient habit and very often interferes with work, however much some may claim that it increases the ability to work.

Is There a Cure?—Yes. But not outside of the man's self. To introduce tobacco substitutes is not a cure, for very often the whole tobacco habit consists in the mere presence of a mere quid in the mouth or a cigar in the mouth. To keep the nervous system up to the tobacco tone by means of drugs would be to introduce into the system something which might lead to worse results than nicotine poison. It is all with the man. He should bring his mightiest will-power to bear upon the habit. He should never forget all the inconveniences and harmful results of indulgence. Bear them in mind; magnify them, if possible. Shape up every fibre to combat the situation. Resolve to be a free man. Persevere in the resolve. Weaken at no point of conflict nor at any time. Two or three weeks of abstentation will brace the will-power. It will feel encouraged by triumph, will grow stronger and stronger, and finally rejoice in entire mastery of the habit.

ONE DOZEN GOOD REASONS WHY A BOY SHOULD NOT USE TOBACCO.

1st. Cigarettes or tobacco in any form hinder the growth and injure the nerves and health.

2d. Cigarettes foster the tobacco habit, and may make any boy a slave to it.

3d. The cigarette habit does not help a boy in his life-work, and may prevent him from obtaining a good position in business.

4th. Most all reliable business establishments refuse to employ boys who smoke cigarettes.

5th. The following are among the poisons and drugs used in the manufacture of cigarettes: Arsenic, Creosote, Nicotine, Opium, Saltpeter, Tonka flavoring, all of which are harmful.

6th. Cigarette smoking makes a boy dull and stupid, impairs his memory and prevents his advance in school.

7th. Smoking creates an unnatural thirst, which may lead to drinking intoxicating liquors.

8th. Smoking is a selfish habit which may cause annoyance, discomfort and distress to others.

9th. Tobacco affects the eye, ear and nose, or sight, hearing and smelling, and also the heart.

10th. It costs more than most boys can afford to pay to have their nerves and health ruined, their standing in school impaired.

11th. Smoking is a useless and expensive habit, and always does harm in a greater or less degree.

12th. It is also a filthy habit and defiles the body, and anything that defiles or injures the body is a sin against God, who created man in His own image.

THE DRUG HABIT.

Narcotics in General.—The most common narcotic in use is probably tobacco, but cases which demonstrate its injury to the morals are so few that no dogmatic opinion can be given, except that its excessive use in the cigarette form, as also in the ordinary ways of chewing, smoking and snuffing, has a tendency to foster in the young inclinations destructive of a high moral tone. Hasheesh, opium, chloral, when used habitually and excessively, have been known so to injure the health and disarrange the mental action that the moral sense protests against their use. Under the prescription of a physician they may be used to allay pain or produce sleep in restless invalids, but the unprofessional use of them is extremely fatal to mind and morals, dulling and stupefying one and producing erratic action in the other. The excessive habitual use of these artificial stimulants creates a morbid moral state unfavorable to the promptings of duty, and promoting a condition unsuited to meditation on moral subjects, especially where the victim is deprived temporarily of the stimulus. The longing, the irrepressible sense of uneasiness, the restlessness which the sufferer, deprived of his habitual ration, endures indicates a moral as well as a mental state unhealthy and perverted.

At a conservative estimate there are today undoubtedly many thousand Americans—male and female—who are incurably addicted to the smoking of opium twice a day, and this is only one item in a startling list, for irrefutable statistics prove that from New York to San Francisco, and from Canada to the Gulf of Mexico, there is a steady continuance in the consumption of acetanilid, antipyrin, phenacetin, caffein, codein, dionin and heroin.

There has been a steady use, in spite of the law, of other drugs that are almost if not quite as destructive to mind and body as opium. Of cocaine, the most insidious of known narcotics, a drug that wrecks its victim more swiftly and surely than even opium, there is an enormous quantity being used in this country. Despite the enactment of drastic laws looking to the suppression of illicit traffic in cocaine, it is estimated that between 125,000 and 175,000 ounces are annually consumed in this country. The drug has many legitimate uses, but of the vast quantity annually consumed, it is estimated that over fifty thousand ounces go to wreck the bodies, minds and souls of its unhappy victims.

Hundreds of thousands of Americans are constantly using "headache powders" that contain acetanilid, a dangerous drug, other thousands cannot sleep without swallowing a quantity of chloral hydrate, which is the "knock-out drops" of the professional thief. It is not too much to say that many, especially in the city, can obtain opium, morphine, cocaine, or any other of the habit-forming drugs which are used in the underworld if they have the price to pay. Nor is the statement exaggerated that in the slums there are far more drugs consumed than one would believe possible with all the stringent laws that we have on the statutes.

Legislative Action.—Until public sentiment has been educated to a more complete and widely diffused conviction as to the danger of even a moderate use of drugs there will be more or less secret indulgence in the dangerous stimulants. The open sale is now prohibited and prevented. Those who persist in using drugs obtain them only by underhanded and indirect methods. Some addicts indulge in powders which they snuff up the nose, in the language of the users called "snow." Perhaps the worst of these illicit drugs is heroin which produces a wild and desperate frenzy in those who indulge and rapidly undermines the nervous constitution. It has worse effects, if anything, than cocaine. The present drug law is very rigid and explicit in regard to the use of any drug in medicines, so that many remedies that were once popular have been discontinued in the drug trade or have been altered in their constituents. Many external preparations that contain narcotics in excess of the amount permitted by law, as for instance two grains of opium per ounce, are so denaturized that they are impossible to be taken internally. There are several classes of preparations that are exempted from the prohibition of the drug act. These are ready-made preparations and remedies compounded in accordance with the United States Pharmacopœa, National Formulary, or other recognized or established formula usually carried in stock by a dealer and sold without a prescription. The narcotic in the preparation must be one of several valuable medicinal constituents. All preparations disposed of must be recorded and the record kept for government inspection for a period of two years and the person dealing in them must register with the Internal Revenue collector of his district. The stringency of this legislation can be recognized from the fact that the numerous cures and sedative medicines which were formerly sold in large quantities, many of them for children's use and all containing habit-forming drugs, have disappeared from the market. The Pure Food Law did much in eliminating the most objectionable of these patent medicines and the more recent legislation, known as the Harrison Act, has removed the remaining preparations that were still objectionable or dangerous. These soothing preparations were especially harmful to children, containing in some form such narcotics as opium, morphine, heroin, codein, chloroform, chloral hydrate, etc. A serious element of danger in these soothing syrups was the fact that nurses often gave them to children, unbeknown to the mother, to put them to sleep. The law permits a registered physician to prescribe a narcotic to any patient of his whom he may visit or who may come to him personally; but it is unlawful for him to send such a prescription through the mails, which is equivalent to an order upon a third party (the druggist) to deliver the narcotic upon presentation of the paper.

OTHER POSSIBLE INTEMPERANCE.

A Word to the Wise Is Sufficient.—The use of stimulants that are naturally deleterious, so much so that the law has been constrained to prevent their use, like drugs and liquors, is not the only indulgence in which there is danger. An immoderate imbibing of tea or coffee, or the intemperate use of any food or beverage, however harmless in itself, may produce very serious results. Many who have yielded to an inordinate craving for coffee have found that it produced grave physical disturbances. There are those who have become tea tipplers and who have indulged themselves in the habit of craving and taking the stimulant very frequently during the day, having a teapot ready at hand. They have found that the immoderate use of these beverages has had serious effects, impairing the digestion, interfering with the circulation of the blood, in some instances excessive coffee drinking causing frequent nose bleeding, producing serious conditions of the nerves, as wakefulness at night and irritability of temper, and in the case of an irritating agent like tea, doing great damage to the delicate lining and tissues of the passages in which the mucous membrane acts an important part. The effects of a beverage like coffee if taken in excess, especially by a person of nervous temperament, may prove to be alarming. When a person drinks two cups of coffee at each meal and takes a cup now and then between meals, he may suddenly find himself, as once under these conditions actually occurred, in a heap at the foot of a flight of steps which he is mounting, and thus be faced with the sudden consciousness of the perilous condition into which he is bringing the delicate organism upon which we depend for our unconscious as well as our conscious acts. The stimulation of these beverages is not necessary for efficient work and the best accomplishment. No one ever did all of his very best under such artificial forcing. There is always a reaction and weak places will always appear in the performance of those who rely upon something outside of the animation and inspiration that an active spirit and an intense soul can germinate within the brain.

BOOK XV

Describes the various schools of medicine and methods of healing. It is divided into eleven chapters, each chapter being as complete as it is possible to make it in a book of this character.

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Book XV

MEDICAL SCHOOLS

PART I.

HOMOEOPATHY

The father of homœopathy, Samuel Christian Friedrich Hahnemann, was born at Meissea, Germany, on the 10th of April, 1755, and died in Paris on the 2d of July, 1843.

In 1790, while engaged in translating into German the Materia Medica of Cullen, a Scotch physician, he was struck with the similarity between the recorded effects of cinchona (Peruvian bark) and some of the symptoms of Fever and Ague. After careful experimentation upon himself and many others through a period of six years, he announced in 1796 as a curative law that medicines act upon the principle of *similia similibus curantur,* or in other words that the symptoms of disease in an individual may be best removed by medicines which cause similar symptoms when administered to healthy persons. It naturally follows that remedies administered upon this principle must be given in small or minute dosage or else the patient's condition would be made worse. Hence the practice of attenuation of remedies by dilution or trituration.

The employment of serums, bacterias and vaccines which at the present time is more or less popular, is also a vindication of homœopathic claims. Homœopathic physicians are in accord with all that tends to the improvement of the curative art and the prevention of disease. Their broadmindness and cultural requirements are probably best shown by quoting the definition of an homœopathic physician as officially adopted by the American Institute of Homœopathy:

"A homœopathic physician is one who adds to his knowledge of medicine a special knowledge of homœopathic therapeutics. All that pertains to the great field of medical learning is his by tradition, by inheritance, by right."

ADMINISTRATION OF THE MEDICINES AND REPETITION OF DOSES.

Doses for Adults.—The medicines may either be administered dry, by placing them on the tongue, or dissolved in water. In most cases four or five globules should be placed dry on the tongue.

Infant Doses.—For infants one globule will be amply sufficient for a dose. If the tongue is dry add a few drops of water. Even new-born infants are able to swallow that.

Dosage in Solution.—Where repeated doses of the medicine at short intervals are required the appropriate remedies should be administered in solution, in water. Fill a tumbler half full of pure water, put eight or ten globules—or, if a trituration, as much as will lie on the point of a penknife—of the medicine into the water and mix it thoroughly. When thus prepared, a dessertspoonful to adults, or a teaspoonful to children, may be given at a time.

Following Symptoms.—If the patient is worse after the first or second dose the symptoms are either the same, but worse, or there are new symptoms instead of, or in addition to, the former ones. In the latter case give *another* remedy. In the former case when the medicine aggravates the symptoms and makes the patient *temporarily* worse (which is, nevertheless, a good sign) the patient should *cease taking it,* and wait for the effects. Should the aggravation be violent it may be relieved by smelling camphor or sweet spirits of nitre.

Relieving Pain.—It sometimes happens that the most violent pains are increased very much by the smallest dose of the suitable remedy. In such cases give a spoonful of black coffee, and as soon as the aggravation has ceased repeat the remedy. If made worse again repeat the coffee, and so on until the improvement is permanent.

Tincture and Lotion.—With regard to the external application of the tincture of arnica, ruta, and so forth, a lotion of sufficient strength for most purposes may be made by putting five or six drops of the tincture in half a tumbler of water. It may be applied to the injured part three or four times a day, or as often as mentioned under each particular case.

DISEASES AND THEIR HOMŒOPATHIC TREATMENT.

The diseases are given in their aphabetical order, so that they may be referred to quickly.

Homœopathy differs from the other regular schools of medicine merely in the treatment of the disease, in that it treats the individual patient and not the disease *per se*.

Consequently, as the cause, symptoms and diagnosis of each disease are given elsewhere in the book, in this chapter we will confine ourselves to the homœopathic treatment.

Abscesses.—An acute abscess should not be poulticed with warm bread and milk or linseed poultices, except in extreme cases. It is much better to use nothing but warm or cold water. Hepar or mercurius hasten the suppuration.

If the suppuration should continue for a considerable length of time use silicea. When hard places remain, mercurius will be useful. For hard and swelled glands on the neck and under the chin and ears use mercurius, dulcamara, calcarea carbonica, and so forth.

Anus.—Intolerable itching, rathania; cracked or fissured, graphites; burning, aloe; red or sore, arsenicum; moist and itching, petroleum.

Arms.—Numb feeling, ignatia; covered with purplish spots, pain in axillary gland, kali carb; rheumatic pain in jonts, ledum; elbow or wrist hot and swollen, mercurius; arms and shoulder lame in wet weather, rhus tox.; painful on motion, bryonia; eruptions at bend of elbows, sepia; offensive sweat in arm pits, silicea or sulphur; herpes at elbow, thuja; involuntary jerking, agaricus; wrist as if sprained, bryonia or rhus tox.; cramp and dead feeling, calcarea carb.

Apoplexy.—Bleeding is sometimes practiced. If the pulse is slow and full, face red or purple, give opium; put a few globules of it upon the tongue and use some globules dissolved in a pint of water as an injection, if the pulse is very weak give lachesis in the same way.

If it was preceded by nausea, or if the patient vomits when he recovers, give antimonium tartaricum; if not better in half an hour, use a solution of the same remedy as an injection. Acon., bell., nux vom., etc. may also be required.

Asthma.—Ipecacuanha will be indicated where there is a feeling of constriction about the chest, accompanied by nausea or vomiting.

Arsenicum for the most violent attacks, especially those occurring in consequence of suppressed catarrh, or in persons with weak lungs.

Bryonia or apis are of great benefit, particularly when exercise aggravates the disease, and when it arises from suppressed or tardy eruptions. Bryonia when the paroxysms come on at night and are attended by pain in the bowels. Apis if the neck feels as if it were compressed.

Nux vomica and lachesis are often beneficial when the patient is forced to sit stooping forward.

Belladonna is most suitable when the attacks are made worse by motion.

Arnica is indicated when not only exercise but even speaking or blowing the nose aggravates the symptoms.

Cepa and euphrasia if children awake suddenly in the night with a suffocating cough.

If the chest feels constricted give glonoine.

+ Cinchona when there is whistling and wheezing in the chest.

Coffea in very sensitive persons who are liable to attacks of asthma in consequence of mental emotions. Aconite, pulsatilla, nux vomica, ignatia, chamomilla, and stapisagria are also given in these cases.

Chamomilla is also serviceable when there is frequent inclnaton to cough.

Rhus when there is very labored breathing.

+ Sulphur for short, wheezing, obstructed respiration with fear of suffocation.

Bed Sores.—Applications of cold water are often beneficial.

When water alone will not effect a cure, dissolve in it a few drops of arnica tincture.

If there appears to be danger of mortification, give cinchona and wash the spots with the same medicine dissolved in a little water.

Bladder.—See Inflammation of Bladder, Hemorrhage of Bladder.

Bleeding.—See Hemorrhage.

Boils.—Arnica will lessen the pain and inflammation.

Sulphur in cases where there is a frequent return of boils.

Belladonna if it present a fiery-red appearance.

Hepar where the suppuration is too slow and scanty.

Mercurius if the suppuration is profuse and the swelling remains.

Lachesis for very painful boils which become bluish and form rapidly.

Bronchitis.—Aconite when the skin is hot and dry and pulse hard and frequent.

Pulsatilla if there is less heat and more coldness of the hands and feet.

Tartar emetic in all cases when the rattling of phlegm in the chest is remarkable from the first.

Belladonna when there is severe headache, aggravated by coughing, and oppression of the chest.

Lachesis if short, hurried respiration and anxiety with dry, fatiguing cough.

Bryonia if cough is dry, with pain in head and chest.

Phosphorus if the respiration continues oppressed.

Bruises.—Apply to injured parts cloths dipped in cold water, and administer arnica internally.

In very severe cases, followed by fever, give aconite.

A lotion of arnica tincture, in the proportion of half a teaspoonful to a tumbler of water, may also be used.

Should suppuration ensue, hepar must be given.

Burns.—Apply heat, wet or dry. Bicarbonate of soda will remove pain. Soap is a good remedy. Lime water and sweet oil or linseed oil and lime water in equal parts is effective.

Back.—Severe pain as if it would break, belladonna; lumbago, bryonia and rhus tox.; crick or stiffness in the back, rhus tox.; lame back with piles, aesculus hip.; pain in small of back, carbo veg.; pain as from long stooping, pulsatilla.

Blood Poisoning.—Lachesis.

Bones.—Diseased, silicea; syphilitic decay of, aurum; bone pains, eupatorium perf.

Cancer.—Arsenicum; from blow, conium.

Carbuncle.—Arnica given at the very first may lessen the pain. If so, nux vomica will remove the remaining symptoms. Arsenicum as soon as it is spreading. Hepar if the patient is weakened by the copious discharge. Silicea for pain and moderate burning. Lachesis if bluish spots or blue blisters appear.

Catarrh in the Head.—Camphora tincture, in drop doses every half hour for a few hours, may abort the cold. Mercurius is the principle remedy in influenza. Hepar if the symptoms have been better and become worse again. If ineffective, give belladonna. Cepa for ordinary catarrh. Lachesis in catarrhs of the severest kind. Arsenicum when the nose feels stopped up and yet runs. Nux vomica when the above shows no improvement in twelve hours.

Catarrh of the Stomach.—Ipecacuanha should be given first, and then, if necessary, one of the following remedies: Rheum if there is diarrhœa of a thin, slimy character. Veratrum when the symptoms are violent and accompanied by vomiting of bile, and so forth. Capsicum if accompanied by burning in the throat.

Chest.—Stitches, bryonia; tightness, phosphorus, stannum.

Cramps.—Of calves, plumbum; with diarrhœa, veratrum alb.; in fingers, feet, toes, etc., cuprum.

Chicken-pox.—This disease rarely requires medical assistance. When, however, there is a considerable degree of fever, aconitum may be given. When there is much headache, belladonna.

Chills and Fever.—See malaria.

Cholera Inantum.—Antimonium crudum where the tongue is coated white or yellow; dryness of mouth with thirst; nausea with vomiting; offensive, slimy stools and so forth. Arsenicum if the child is very weak, pale and emaciated. Bryonia where the diarrhœa comes on in hot weather. Ipecacuanha if given in the commencement of the disease will often arrest its progress at once.

Cholera Morbus.—Ipecacuanha if the attacks of vomiting predominate. Nux vomica where there is anxiety, pain in the abdomen, tenesmus and so forth. Veratrum should the disease grow worse with cramps, weakness, shriveling, cold, clammy perspiration, and so forth.

Cold.—See Catarrh.

Colic.—Chamomilla is suitable for children, also for grown persons when blue circles appear around the eyes. Nux vomica when there is constipation. Mercurius for violent, twisting colic. Pulsatilla when there is stinging pain in the bowels. Colocynthis is the principle remedy for colic. It is to be given when the pains are very violent, constant, or only cease for a short time, and then recommence with greater violence. Cinchona for flatulency.

Constipation.—Nux vomica in persons of sedentary habit. Bryonia in warm weather. Lachesis when there is a feeling of weight and oppression. Natrum muriaticum in tedious cases.

Consumption.—Treat in the beginning according to the symptoms that arise. (See Cough and Hemorrhage of the Lungs.)

Cough.—When catarrh is accompanied by cough, or when a dry cough remains after the first symptoms have disappeared under the action of other medicines, give nux vomica. If the cough is dry and excites retching or vomiting, ipecacuanha. If it is hollow and causes vomiting, carbo vegetabilis. If accompanied by tough expectoration, chamomilla. If it is moist or loose, ferrum phos or pulsatilla.

Croup.—If children waken suddenly at night and begin with a choking cough, give antimonium tartaricum. Where there is great agitation, give aconite every ten, twenty or thirty minutes, according to the urgency of the case. Spongia is indicated if the voice is rough and the cough hollow. Hepar if the voice is only lisping and the cough crowing. Phosphorus and carbo vegetabilis have saved life when all else has failed.

Diarrhœa.—Ipecacuanha in children with screaming, tossing and uneasiness. Chamomilla for children when they want to be carried constantly. Pulsatilla for watery and offensive diarrhœa with burning pain and soreness of the anus. Sulphur for green, slimy diarrhœa. Antimonium crudum for watery diarrhœa with disordered stomach. Rheum for sour, thin, fermented diarrhœa, common with children. Cinchona in all kinds of diarrhœa occurring in debilitated persons.

Diphtheria.—Bryonia when patient is quickly prostrated and complains of pains everywhere. Belladonna when patient is restless and complains of sore throat. Lachesis when, after belladonna, by next evening there is no marked change for the better.

Dropsy.—Dropsy may be due to disease of the heart, lungs, liver, kidneys or peritoneum. The treatment of the various forms is given under the different diseases causing it.

Dysentery.—Mercurius when there is an urgent desire to evacuate. Nux vomica if much straining before and during stool, but relief afterward. Mercurius sublimatis when first much bile is discharged, and then blood or slime. Cinchona for epidemic and periodic dysentery. Veratrum if the discharge is watery, with bloody mucus and flakes swimming in it. Colocynthis for extreme pain in the bowels. Sulphur in all protracted cases.

Dyspepsia.—Nux vomica if caused by dissipation and late hours. Chamomilla when there is a bitter taste in the mouth, bitter eructations, vomiting of mucus or bile. Antimonium crudum when the patient feels sick at the stomach and the tongue is coated or blistered. Bryonia when the stomach is disordered and the patient feels cold and chilly. Ipecacuanha when there is a catarrhal state of the stomach.

Ear.—Oozing raw and sticky behind the ear, graphites; bloody discharge, petroleum; green discharge, mercurius or pulsatilla; growths, polypi in ear, thuja; hearing defective, calcarea carb.; earache, pulsatilla; chronic discharge of blood and matter (ororrhœa), capsicum; redness, burning and itching as if frozen, agaricus; ichorous discharge, arsenicum.

Eczema.—Dry and scurfy even in hot weather, alumina; humid and sticky, graphites; chronic eczema, bran-like, arsenicum; after ointments and external applications have been used unsuccessfully, hepar sulph.;

itching intensely, mezereum; scabby, easily bleeding after vaccination, thuja; burning, sulphur; watery, rhus tox.

Eyes.—Tired from overwork, ruta; corner of lids raw, graphites; twitching of eyelids, agaricus; puffy swelling, apis; inflamed, aconite; hot and burning, belladonna; blinking, watery, red and inflamed, euphrasia.

Face.—Scaly herpes on cheek, anacardium; pimples and pustules, antimonium crud.; puffy and swollen under the eyes, apis; burning pimples, arsenicum; moist, scurfy eruptions, calcarea carb.; eczema, moist around mouth and on chin, graphites; lips cracked and bleeding, ignatial; fiery red eruptions, hypericum; itching tetter around nose and mouth, ledum; raw spots from scratching, mezereum; itching and pimples on forehead, sarsaparilla; yellow tetter around mouth, yellow across nose, sepia; blood boils, silicea; dry itching eruption, staphisagria; "blackheads," sulphur; greasy skin, thuja or natrum mur.; rough skin, acne, berberis.

Felon.—At the beginning, mercurius; follow with arsenicum; to allay the pain, ammonium carb.

Feet.—Itching, ledum; sweating, silicea; stinking feet and arm-pits, sweaty and sore, petroleum; feet waxy and swollen, apis; pain in heel, cyclamen; very painful callosities, lycopodium; bunion, hypericum; frost bitten or feeling as if, agaricus; cramp in, sulphur; fidgety, zincum; sole painful and hard, baryta carb.; cold and damp, calcarea carb.; cracked skin of, hepar sulph.; tender and sweaty, petroleum.

Grippe.—With dry fever, restlessness and racking cough, aconite; sudden onset of the disease with alarming prostration, arsenicum; shivers, prostration, bone pains, aching, eupatorium perf. and gelsemium, alternately; frontal headache, sneezing, fluent coryza, rheumatic pains, limbs heavy, indisposition to move, dry cough, chest painful, bryonia (a good remedy) ; for lingering effects, chronic grippe, lycopodium.

Tardy Menstruation.—Pulsatilla especially for females of a mild, easy disposition. Cocculus when the patient suffers from nervous symptoms. Belladonna if there is a rush of blood to the head. Apis if flow is irregular. Nux meschata for women with an irregular, scanty, black flow. Phosphorus for women of a delicate constitution. Arsenicum in cases with great weakness.

Suppression of the Menses.—Aconitum when it arises from fright. Bryonia for unmarried women.

Too Copious Menstruation.—Ipecacuanha for too great a flow. Crocus particularly when the discharge is dark colored. Platina when attended with bearing down pains. Chamomilla with thirst, coldness of the extremities and sometimes fainting. Nux vomica when the menstruation continues too long or returns again.

Painful Menstruation.—Belladonna when there is severe pain in the back with a rush of blood to the head. Chamomilla when the pains resemble labor pains. Coffea for nervous excitement.

Erysipelas.—Aconite in cases with much fever. Belladonna with acute shooting pains, heat and tingling. Rhus if small or large blisters appear. Bryonia when the disease attacks the joints. Arsenicum and sulphur in cases terminating in ulceration.

Fainting.—If it arises from fright, coffea, opium or aconitum. From loss of blood, a few drops of wine and afterward cinchona. When produced by sudden emotions, ignatia or chamomilla. If preceded by nausea, ipecacuanha.

Gout.—Nux vomica for first attack. Aconitum for violent fever. Arnica when the pain in the joints resembles that of a spasm. Pulsatilla when pain flies quickly from one joint to another. Calcarea when the attacks return at every change in the weather. Colocynthis if limbs remain stiff afterward.

Headache.—Glonoine when the attack comes on suddenly. Aconite when the pain is very severe and over the whole head. Belladonna when the pain is deep seated. Pulsatilla when pain is dull and oppressive. Rhus when there is burning, throbbing pain.

Heartburn.—Nux vomica often helps. Cinchona if it comes especially after eating. Carbo vegetabilis if cinchona does not help. Capsicum if none of the above give relief.

Inflammation of Bladder.—Aconite for the most common causes when there is painful urging. Pulsatilla if there are pressing, cutting pains. Belladonna if pains are piercing. Colocynthis if the urine becomes sticky and gelatinous.

Inflammation of the Bowels.—Aconite at the commencement. Ipecacuanha when the pains are worse in front. Bryonia when the pain and fever are violent. Chamomilla if the pains are dull.

Jaundice.—Opium, mercurius, cinchona, hepar, sulphur, lachesis and chamomilla have all been used with good results.

Leucorrhea.—Calcarea carbonica when the discharge is milky and often attended by itching. Pulsatilla when the discharge is thick like cream. Cocculus if the discharge is mixed with blood. Natrum muriaticum when the discharge is copious. Sulphur for inveterate cases when the discharge is yellowish.

Lumbago.—Aconitum if accompanied by much fever. Bryonia when the patient walks in a stooping posture. Nux vomica when the affected part feels as if bruised.

Malaria.—Cinchona as soon as you feel unwell. Ipecacuanha if no better after twelve hours. Arsenicum when the different stages are not distinctly marked. Arnica when the cold stages come on early in the morning. Veratrum when there is external coldness with internal heat. Sambucus when sweating is very profuse. Belladonna and hyoscyamus when two or more attacks occur in the twenty-four hours.

Measles.—Aconite, the chief medicine, is especially indicated when the fever is violent. Pulsatilla and euphrasia when the catarrhal symptoms predominate. Belladonna when the throat becomes sore. Ipecacuanha for arresting vomiting. Bryonia when the eruption is imperfectly developed.

Morning Sickness.—Ipecacuanha, nux moschata, veratrum and phosphorus have all proved beneficial in the nausea and vomiting of pregnancy.

Mumps.—Mercurius is the principal remedy. Belladonna or hyoscyamus if the swelling is very red.

Mind.—Fear, dread, aconite; fixed thoughts, iodium; suicidal thoughts, aurumn; well known things and places seem strange, gloucinum; silent grief, ignatia; hears voices, anacardium; delirium with bright eyes, belladonna; to prevent "stage fright," anacardium.

Mouth.—Sore mouth, borax; parched, bryonia; ulcerated, kali chlorium; teeth loose, gums spongy, mercurius; bitter taste, bryonia, nux vomica; blistered, staphisagria.

Neuralgia.—Aconitum if there is redness and heat of the face. Belladonna if the pain is most violent under the eye. Platina for boring, cramp-like pain. Colocynthis for rending and darting pain. Arnica for heat and throbbing. Bryonia for heat and pressing pain.

Nose-Bleed.—Arnica when caused by a blow, fall and so forth. Pulsatilla for women. Aconite for plethoric individuals. Carbo vegetabilis when nose bleeds frequently and from slight causes. Rhus when brought on by great exertion.

Neurasthenia.—Nervousness following fever, ambra; coldness of back and shoulders, ammonium mur.; sensation as if one could not breathe, asafoetida; great exhaustion in the morning, calcarea carb.; weakness, antimonium crud.; acrid discharge, arsenicum; ulcerated, fœtid, aurum;

Nose.—Red, pointed, cracked, alumina; sore, cracked, crusty nostrils, in farm room, pulsatilla; swollen and painful chronic inflammation, phosphorus; dirty, bloody, fœtid, nitric acid; red, swollen, shining, painful to touch, mercurius.

Palpitation of the Heart.—Aconite, chamomilla, veratrum, coffea and opium, when caused by mental emotions. Nux moschata when accompanied by fainting. Cinchona for persons with a sour stomach.

Pain.—Bruised like, arnica; bones ache, eupatorium perf.; burning, arsenicum; slowly increase and decrease, stannum; periodical, shifting, wandering, pulsatilla; worse by motion, bryonia; must move for relief, rhus tox.

Palsy.—Wasting palsy, plumbum; argentum nit.; shaking palsy, tartanula hisp.

Piles.—Aconite when blood is discharged. Nux vomica when there is a burning, pricking pain. Apis for small stinging, biting tumors. Capsicum when the tumors are much swollen. Ignatio for violent stitches which penetrate deeply. Chamomilla, when the blood flows freely.

Pleurisy.—Aconite is the chief remedy. Bryonia for acute, shooting pains in the chest.

Pneumonia.—Aconite in the beginning. Bryonia for cough with rusty-colored sputum. Mercurius for profuse sweats. Antimonium tartaricum when there is oppression of the chest. Sulphur for frequent, weak faint spells, and so forth. Arsenicum when there is great prostration with anxious restlessness.

Quinsy.—Hepar in the beginning. Mercurius when the tongue is furred and flabby. Lachesis when there are white or gray patches on the throat.

Rheumatism.—Aconite if there is high fever, dry, hot skin, thirst and redness of the cheeks. Belladonna when the pain is chiefly in the joints. Mercurius and pulsatilla when the pains are worse at night. Rhus for red and shining swelling of the joints. Cinchona for pains which are aggravated by the slightest touch. Aconite, bryonia, calcarea carbonica, dulcamara, mercurius or sulphur, in chronic rheumatism for pains which are excited or made worse by the slightest chill. Calcarea carbonic, dulcamara, rhus toxicodendron and hepar sulphuris in chronic rheumatism when the attacks are assisted by bad weather.

Scarlet Fever.—Aconite at the beginning. Belladonna and mercurius in the simple forms when the eruption is bright red. Bryonia when the eruption does not come out well. Pulsatilla for great restlessness. Lachesis and lycopodium, when the eruption is dark in color and scanty. Arsenicum when the ulcers in the throat turn livid about the edges and emit an offensive odor.

Sleeplessness.—Coffea, opium, aconitum and ignatia when due to exciting events. Pulsatilla when due to excess of coffee and tea. Chamomilla when due to complaints of the bowels.

Small-Pox.—Aconitum if there are congestions to the head and lungs. Belladonna if there is delirium with headache. Bryonia if the eruption is delayed. Variolinum is the most important remedy.

Sore Nipples.—Tincture of arnica previous to confinement will prevent them. Arnica internally and bathing the nipples with a solution of ten drops of tincture of arnica to a half tumbler of water several times a day.

Sore Throat.—Aconite for difficulty and pain in swallowing and speaking. Ignatia, nux vomica and pulsatilla when there is a constant feeling as if there were a lump in the throat. Bryonia, rhus and capsicum when the throat is painful on being touched. Sulphur for frequent or constant sore throat.

Spasms.—Chamomilla if there is convulsive jerking of the limbs, and so forth, followed by drowsiness. Belladonna when the child starts suddenly from sleep with pupils dilated, and so forth. Ignatia when the cause is unknown. Coffea in weak and nervous children. Ipecacuanha in asthmatic children.

Typhoid Fever.—Baptisia, bryonia, rhus tox., phosphoric acid, arsenicum and hyoscyamus are chiefly used.

Toothache.—If in decayed tooth, mercurius; in sound teeth, spigelia; intense throbbing and redness, belladonna; when relieved by cold water, coffea; in recently filled teeth, arnica.

Ulcers.—Arsenicum when they burn greatly. Carbo vegetabilis when they smell offensively. Lachesis when they spread.

Urinary Difficulties.—Pulsatilla, belladonna, cinchona, silicea or stramonium in inability to retain urine during pregnancy. Aconite, pulsatilla, arnica, nux vomica, belladonna, mercurius, hepar, colocynthis, apis, cepa and opium for difficulty and pain in making water.

Vertigo.—Aconite, when nausea, eruptions and vomiting are present. Pulsatilla or antimonium crudum, if there be a disordered stomach. Nux vomica, chamomilla, pulsatilla, rhus or coculus if it occurs while eating or after a hearty meal.

Varicose Veins.—Hamamelis, internally and externally; tending to ulcerous condition, carbo veg.

Whooping Cough.—Aconite at the commencement. Dulcamara if brought on by a severe cold. Pulsatilla for loose cough with vomiting. Nux vomica, belladonna and hepar when the cough is dry. Ipecacuanha, veratrum, carbo vegetabilis, cina, caprum, metallicum and arnica give good results.

Warts.—Warty, fungous excrescences, fig warts and polypi, thuja; warts on nose and eyebrows, etc., causticum; in pale, nervous unhealthy persons, staphisagria; in great crops of warts on hands, ferrum picricum.

Women.—Delayed menses, pain in back, pulsatilla; with yellow color of skin, etc., sepia; with cramps, cuprum; with fever, belladonna. Painful with headache and chilliness, calcarea carb.; with nervous excitement, coffea; writhing pain, nux vomica; sour stomach, heaviness, wants open air, pulsatilla; too soon, every two weeks, hysterical, ignatia; headache, shivering, calcarea; irregular, pulsatilla; with sick headache, sulphur; too scant, pulsatilla; yellow color of skin, excoriating, sepia; chilly, milky discharge, calcarea carb.; vertigo, throbbing headache, belladonna; from stooping, staggering blindness, numbness, headache every other day or one-sided, pulsatilla; bitter taste, bilious, nux vomica.

Worms.—Ipecacuanha, carbo vegetabilis, pulsatilla, cinchona and nux vomica are useful remedies. Aconitum, cina, mercurius, belladonna and lachesis for colic caused by worms. Sulphus and calcarea for tape worms.

MEDICAL SCHOOLS

PART II.

OSTEOPATHY

In a consideration of this subject it is well to have in mind that it is not something which may be practiced off hand after cursory study, even though the works studied be the best extant. No layman of intelligence, no matter how much he might have read about surgery, would attempt to cut off a man's leg except under the most dire circumstances and the securing of a surgeon were impossible. Surgery requires years of study and years of practice to make proficient, and in osteopathics years of study and practice are quite as essential in so far as the obtaining of results is concerned. So thoroughly is this fact now recognized that already in a large and growing number of states the professional practice of osteopathy is by law restricted to those who have taken a regular collegiate osteopathic course and received their degree of Doctor of Osteopathy (D. O.). Taking the Philadelphia College of Osteopathy (governed by the laws of the State of Pennsylvania) as an instance, the course is four years, the matriculation and first two years of the course being practically indentical with that of the medical profession, the last two years, however, materially differing in that while the medical student largely devotes his time to the study of medicines and their effects, the time of the osteopathic student is most chiefly given to the study of higher anatomy and physiology, the nerve centers and their branches, the nervous cells themselves, the muscles and fibres and the minutest co-relationship of all of them with the spinal cord and vertebra, in dissection of the human cadaver with relation to these matters and in practical work on the living body with the object of being able to recognize normal and abnormal conditions by a feeling with the hands.

The high place and professional standing of the properly licensed osteopathic physician is thoroughly recognized by the medical profession and it is of daily occurrence for the most eminent physicians and surgeons to refer their patients to osteopaths of proper qualifications. But, as in the medical profession there are "quacks," so in osteopathy there are those who are not professionally qualified and when such men undertake the curing of all diseases and declare that osteopathy is the alpha and omega in the treatment of all disease, they not only do detriment to the science of osteopathy, but they become a menace to society.

It will be apparent from the foregoing that no mere chapter, such as the present, can furnish sufficient information to enable the reader, without further study, to proficiently undertake the exercise of osteopathic practice, even in its simpler forms. It is intended to outline here simply the salient features. To do more would require a large volume devoted exclusively to the subject, after the study of which much practice in actual manipulation would be essential.

The science of osteopathy was discovered by Dr. A. T. Still, of Kirksville, Mo., and was first propounded in 1874. There have been innumerable definitions of osteopathy, but it may be briefly referred to as the science and art of curing without the use of knife or drugs. One of the best descriptions given has been that of J. Martin Littlejohn, M. D., D. O., Ph. D., LL. D., F. S.S.C., F. R. S. L., etc., in an address before the Royal Society of Literature, London. Dr. Littlejohn said:

"Osteopathy is based on an accurate knowledge of the anatomical structure and physiological functions of the body organism. Nature has placed within the body certain vital forces, vitalized fluids, and vitalizing processes and activities, which, in harmonious accord with one another, maintain the equilibrium of the body mechanism; any disturbance of these forces, fluids or processes and any interference with their activity, circulation or distribution involves the absence of harmony and interference with the body order. Osteopathic manipulation aims to restore these to their normal condition, so that the body may regain its normal functional equilibrium and form. In this way osteopathy claims that life is revitalized and strengthened by vital forces, vitalizing fluids or processes, disease being removed or overborne by getting rid of an abnormal structural alignment that produces disharmony in the body and prevents normal functional activity."

Before taking up the subject of Osteopathy in detail it may be well to define certain words which will be used in this article and which, except professionally, are not in common use:

Atlas—The first vertebra of the neck, articulating immediately with the skull, thus sustaining the globe of the head, whence the name.

Ganglia—Plural of ganglion.

Ganglion (*pl. ganglia*)—(a) A mass or knot of nervous matter, including nerve cells, usually forming an enlargement in the course of a nerve; (b) a node or gland in the lymphatic system, as a lymphatic ganglion.

Pia Mater—The delicate and highly vascular membrane immediately investing the brain and spinal cord.

Plexus (*pl. plexuses*)—A network of vessels, nerves or fibers forming a distributing center.

Pneumogastric—Of or pertaining to the lungs and the stomach and here used as respects the pneumogastric nerve.

Splanchnic—Of or pertaining to the viscera; visceral.

Subluxation—This word belongs peculiarly to osteopathy and chiropractic and is seldom used in other systems of therapeutics. "Luxation" means a dislocation and consequently subluxation means a partial or minor dislocation.

Viscera—Plural of viscus.

Viscus—One of the great organs, as the brain, heart or stomach, in the great cavities of the body—especially used in the plural (*viscera*) and applied to the organs contained in the abdomen.

Vasomotor Center—The chief dominating or general center which supplies all the unstriped muscles of the arterial system with motor nerves, situated in a part of the medulla oblongata (posterior part of brain connected with the spinal cord); a center of reflex action by the working of which afferent impulses are changed into efferent—vasomotor impulses leading either to dilation or constriction of the blood vessels.

We shall now briefly consider the requirements of and the claims for osteopathy:

Requirements of Osteopathy.—Osteopathy demands an exact and most thorough knowledge of the anatomy or structure of the human body. It requires an intimate acquaintance with the physiology and functions of the various tissues, fluids and organs. Add to this a comprehensive study of psychology or the workings of the mind. It also includes a knowledge of the chemistry and physics of the human mechanism.

Nature Herself Can Cure.—By study and experiments, osteopathy claims to have discovered certain laws of nature and methods of cure within the body itself. By the application of these methods, according to osteopathic practice, nature, herself, may remove the disease and cause the body to again regain its health and strength. This occurs not from any stimulation caused by drugs, but in accordance with certain mechanical principles residing in the body itself.

The Body a Machine.—Osteopathy regards the body as a wonderful mechanism, and treats it as an intelligent machinist would treat a complicated machine with which he was perfectly familiar.

The Human System Perfect.—The human system is regarded as being perfect. Man is believed to have been created complete, having within himself the power to regain health and vigor. Were such not the case, it is argued, the human body would be incomplete, and man would have to look outside for the relief of disease.

By an exhaustive study of the anatomy or structure, and the physiology or functions of this human body, it is observed that man is a complete being, capable of performing his own physical and mental acts when in health.

Disease is regarded as simply disorder. To restore health, the disordered parts must be corrected.

Drugs Harmful.—Osteopathy believes the giving of drugs for the cure of human ills to be both unreliable and unscientific. It absolutely denies the curative properties of drugs. It so regards the whole system of drug treatment as unnatural and destructive to health.

Disease Not an Entity.—The osteopath does not look upon disease as a definite enemy which must be attacked by some foreign force. Disease is regarded as a disorder of the normal structure of a part, causing some disorder of the normal function of the body.

The Human Body a Perfect Machine.—The human body is looked upon as a perfect machine. Order is considered the first law of health. If in order, the human machine will do its work properly and run its allotted time.

What Osteopathy Does.—Osteopathy endeavors to discover and correct all mechanical disorders in the human machine, and to direct the recuperative power of nature within the body to the cure of disease. It claims that if there is an unobstructed nerve and blood supply to and from all parts of the well-fed man, the effects called disease will surely disappear.

Treatment.—The treatment is by manipulation. According to Dr. A. T. Still, exciting the nerves causes muscles to contract and compress venous flow of blood to the heart. The bones can be used as levers to relieve pressure on nerves, veins and arteries. Treatment is chiefly by manipulations of the spinal column and adjustments of subluxated vertebra.

Object of Osteopathy.—The object of osteopathy is to permit a perfect freedom of all fluids, forces and substances pertaining to life. It endeavors to restore the harmonious action of all the parts, which must ensue when they are unirritated by any cause. It aims to maintain the complete circuit of the motor, sensory and sympathetic nerves.

Cause of Disease.—The cause of the disease, according to osteopathy, may be dislocated or subdislocated bone, ligament, cartilage or muscle, causing inhibition or irritation of a nerve fiber or an obstruction of an artery, vein, lymphatic or some fluid of the body to which the affected nerve or vessel is distributed or connected.

These osteopathic disorders are not necessarily surgical dislocations, but are parts out of line, out of proper adjustment. They comprise slight displacements of various structures, chiefly bones and ligaments, with muscular contractions, little adhesions, contractions from cold, irritation or other outside influences, causing unnatural pressure upon vessels or nerves.

Osteopathic Examination.—The patient is examined from the physical standpoint. In the eyes of the osteopath he is a machine out of order. By his knowledge of the details of the human machine, when in health, the osteopath feels able to detect the disorders that are present in disease.

Through a highly developed sense of touch and a knowledge of anatomy, the osteopath claims to be able to discover the slightest anatomical disorder. The conditions present and the symptoms shown are used as clues to find the cause of the disease. By means of these signs and symptoms the nerve supply of the diseased part is traced to its origin and the course of the blood channels is followed from the parts diseased to the exact region where the abnormal condition is caused. When the primary lesion, or the point where the disease is caused, is located, treatment begins.

Dr. Littlejohn is authority for the following:

Diagnosis.—"Osteopathic diagnosis is reduced to the discovery or attempted discovery of the cause or causes of a disease. Conditions may be summarized under the heads:

"(1) Misplacements of bone, cartilage, ligament, muscles, membrane or organs of the body;

"(2) Disturbances in the fluids of the organism, including the blood, the lymph and other secretions of the body; and

"(3) Disorders or derangements by tension, impingement, thickening, induration, and so forth, of the nervous system, including its centers, ganglia, plexuses and fibres.

Therapeutics.—"Following up this line of physiological thought, the osteopathic therapeutics is simplified and will consist of the correction or the removal of the cause or causes of disease.

"Corresponding with the diagnostic points, we find:

"(1) Scientific manipulations that aim to correct displacements in the bony and other tissue structures of the body, in its membranes or organs;

"(2) Scientific manipulations that are designed to rectify the disturbances in the circulation of the body fluids and to restore them to their normal condition, especially blood conditions and defects in the blood circulation and distribution; and

"(3) Scientific manipulations that utilize the nervous system with its fibers, ganglia and centers with the view of correcting the nervous disorders, toning up the general system or its local parts, promoting trophic conditions of the nerves and muscles and stimulating a normal correlation of the physic with physiological and vegetative functions of the human system.

The Essential Principles of Osteopathy.—"The essential principles of osteopathy may be set down thus:

"(1) Health is natural; disease and death between the time of birth and old age is unnatural;

"(2) All bodily disorders are the result of mechanical obstruction to free circulation of the vital fluids and forces, and the continuity of nerve forces.

"(3) The impediments in the way of free fluid circulation and uninterrupted nerve force are found in osseous displacements, contracted muscles, ruptured ligaments, constricted or dilated vessels, hypertrophied tissue substance or congested conditions of the tissues.

"(4) These abnormal conditions represent not only the change in structure or function on the part of particular portions of the organism, but also produce physiological disorganization of the vital forces of the body, producing an irritable condition either of overstimulation or inhibition resulting in excessive activity, partial activity or inactivity of the vital forces and processes.

"(5) In the restoration to the normal the main purpose in operative manipulation is to co-ordinate the vital forces, to restore harmony in the vital functions and thus aid nature in the elimination and checking of disease conditions."

The Nervous System.—The nervous system occupies a very important place in the study and practice of osteopathy. For convenience of reference it is commonly divided into the cerebro-spinal nervous system and the sympathetic nervous system, but in fact they are parts of one whole, each cell only being capable of perfect life so long as it is able to reciprocally communicate with all other cells through the central nervous system, all thus connecting with the spinal cord in the vertebral column. A thorough study of the chapter on Anatomy and Physiology will show the relationship of the nervous system to the whole body, but in respect of osteopathy it is necesary to delve still deeper and understand the working of every nerve cell. In the so-called sympathetic system, especial attention is drawn to the *ganglia,* the *plexuses* and the *communicating fibers.* The lateral chains of ganglia are placed one on each side of the vertebral column and are connected with the cerebro-spinal nerves by well-marked cords. The visceral ganglia are found between the coats of viscera and are known as the peripheral apparatus. The principal plexuses are four in number, but there are many branches or subsidiary plexuses. The first of the four, the pharyngeal, is situated around the larynx and pharynx; the second, or cardio-pulmonary, lies in the thorax; the third, or solar plexus, encircles the coeliac axis and superior mesenteric artery; and the fourth is the pelvic plexus, which governs the generative organs and rectum. The ganglia and plexuses are all intimately connected with each other by numerous nerve fibers, and the whole constitutes the sympathetic nervous system. "The function of the sympathetic system is to control the calibre of blood vessels, the plain muscle fibers and the actions of the secretory and excretory glands." (Tasker.) "In general it may be said that the sympathetic presides over involuntary movements, nutrition and secretion, holds an important influence over temperature and vaso-motor action, and is endowed with a dull sensibility." (Robinson's *Abdominal Brain.*) It has been scientifically demonstrated that the sympathetic system may in a certain sense have an independent action, "but it is to be borne in mind that under normal conditions the cerebro-spinal nerves can influence these activities, either repressing or augmenting them.

The ganglia of the sympathetic contain (a) nerve cells, (b) afferent fibers, (c) efferent fibers,—and are, therefore, governing centers. They are able to receive sensation and transform this into motor impulses, and hence are, in a measure, independent. The cervical portion of the gangliated cord contains three ganglia, which are designated as superior, middle and inferior, according to position. These ganglia are important to the osteopath because they are in a measure affected by direct manipulation, *i. e.,* pressure can be transmitted to them through the soft tissues over them." (Tasker.)

The plexuses are of such importance in osteopathic practice that they deserve especial mention, particularly the cardiac, the pulmonary and the solar:

(a). **The Cardiac Plexus.**—This consists of a superficial and a deep division, and is situated at the base of the heart and in the concavity of the arch of the aorta. It is formed by fibers from the pneumogastric and cervical cardiac sympathetics; also cardiac branches from the second, third and fourth dorsal segments of the spinal cord. The cardiac nerves form the cervical sympathetic chain all entering the cardiac plexus, but with variable distribution. The superficial cardiac plexus receives the "left superior cardiac nerve of the sympathetic and the left inferior cervical cardiac branch of the pneumogastric." (Morris' Anatomy.) The deep cardiac plexus receives all the other cardiac nerves.

(b). **Pulmonary Plexus.**—"The anterior pulmonary plexus is formed by a branch of the pneumogastric and the sympathetic. Its branches enter the lung on the posterior aspect of the bronchus." (Tasker.)

(c). **Solar Plexus** (Sometimes called the Abdominal Brain).—"The coeliac or solar plexus supplies the viscera in the abdominal cavity. It consists of a great network of nerves and ganglia, situated behind the pancreas and the lesser peritoneal cavity and in front of the aorta and crura of the diaphragm. It surrounds the coeliac axis and root of the superior mesenteric artery, extending downward as low as the pancreas and outward to the suprarenal glands. This plexus and the ganglia connected with it, receive the great, the small and the least planchnic nerves of both sides, and some filaments from the right vagus (pneumogastric) nerve. It distributes filaments which accompany, under the names of plexuses, all the branches from the front of the abdominal aorta." (*Gray's Anatomy.*) The branches of the abdominal aorta, as subsidiary plexuses, take their names from the arteries they accompany—as, the *phrenic* or *diaphragmatic plexus;* the *suprarenal;* the *renal;* the *sper-*

matic and *ovarian;* the *gastric;* the *splenic;* the *hepatic;* the *superior mesenteric;* the *aortic;* the ultimate distribution of the branches being to the muscular and secretory tissues of all the abdominal viscera, and to the muscular coat of the arteries supplying these viscera. The solar plexus is the greatest of all the plexuses. "It is connected with almost every organ in the body, with supremacy over visceral circulation, with a control over visceral secretion and nutrition, with a reflex influence over the heart that often leads to fainting and may even lead to fatality." (Byron Robinson's *Abdominal Brain.*)

The Vertebral or Spinal Column.—It is held by osteopaths that through the general nervous system and its accessories the spinal vertebra is in direct relation with all parts of the body and that if the anatomy of the body be thoroughly understood and there be full knowledge of all the nerves, nerve cells, muscles, cords, etc., and their accessories, as also of the nature of their respective reflex actions, disease in any and all parts of the body may in most cases be checked and cured by a proper manipulation of the vertebra, arteries, nerves and muscles; or in some cases of other points, such as the shoulder, etc., but primarily the vertebra, for it is a fundamental principle of osteopathy that a perfect adjustment of the spinal vertebra is essential to healthy organism and therefore not only is special study given to the vertebra, the spinal cord and the nerves emanating therefrom, but in treatment of all disease especial care is given to manipulation of the spine and to perfect adjustment of the subluxated vertebra.

Many authenticated instances are given in osteopathic works of effects produced on different organs by manipulation of certain parts of the vertebra. Referring to some of these cases, J. Deason, Sc. B., M. S., Ph. G., D. O., Director of the A. T. Still Research Institute, says: "The secretions of the kidneys can be increased from 25 to 100 per cent. by stimulatory treatment applied to the eleventh and twelfth thoracic segments of the spine. The secretion thus produced often remains increased for two or three hours or longer, during which time the water content of the body is greatly reduced. The significance of such treatment is apparent. If the toxin content of the blood can be materially reduced, as experimental evidence shows it can be, this is a very efficient method in infectious fevers."

Subluxations.—A subluxation may be very slight, yet be the cause of serious physical disorders, directly, indirectly or reflexively. Dain L. Tasker, D. O., D. Sc. O., Professor of Theory and Practice in the Pacific

School of Osteopathy, says: "In order to get at a true understanding of what subluxation is we must make a careful study of the structures which form a point and their vital manifestations. The bones of the skeleton are bound together by ligaments and muscles. The opposing surfaces of bones forming movable joints are covered with cartilage. The muscles execute and the ligaments or soft parts around a point limit the motions of the articulation. All movable articulations have their bony parts maintained in their normal relations either by the form of the bones and cartilages attached to them or by the equal tension of all the controlling muscles. Enarthrodial joints (*i. e.,* ball and socket joints) have freest movements and yet are the least dependent on muscles for retention of their normal position. Air pressure and the form of the bones are responsible for the integrity of these joints. These joints are less frequently subluxated than those possessing more limited motion. Arthrodial joints (*i. e.,* semi-flat or qualified ball and socket joints) depend upon the equal tension of their governing muscles to keep the opposed surfaces in their proper relations. Co-ordination of the muscular tension is usually so perfect that the joint surfaces are perfectly opposed to each other. The disturbance of this nicely balanced muscular tension results in the drawing of one or both bony surfaces away from their true relations; not entirely but sufficiently to make it possible for the physician's fingers to note the change." Dr. Tasker then refers to subluxations of the atlas, or first vertebra, and continues: "The complete dislocation of this bone from the occiput means death; intermediate positions, subluxations, mean both irritation of nerves direct, and both direct and indirect disturbances of circulation; direct disturbance by pressure exerted on arteries and veins, indirect disturbance by excitation of vaso-motor nerves."

PRACTICAL OSTEOPATHY.

In etiology, symptoms and prognosis osteopathy does not materially differ from the other schools. It is in diagnosis and treatment that osteopathy stands alone.

Osteopathic Treatment.—The mode of treatment is a scientific manipulation by which the dislocation is reduced. The manipulation is based on the physical laws governing the actions of the human machine.

The osteopath not only applies the mechanical principle which is indicated in each separate case, but adopts other scientific agencies. Every move made by him in treatment is with the definite purpose of correcting the anatomical disorders.

MEDICAL SCHOOLS

PART III.

MASSAGE AS A TREATMENT OF DISEASE.

General Description.—Massage is a method of treating abnormal conditions by various manipulations whereby the muscles, nerves and blood-vessels are treated by scientific rubbing, rolling, kneading, moulding, thumping, squeezing, pinching, slapping, etc., the blood thereby being hastened along its course.

The treatment has been abused by many unscrupulous impostors, and in consequence there is a prejudice against massage with many people. Of its therapeutic value, when judiciously used, there can, however, be no doubt, but it is unwise as a rule to use massage without the advice of the family physician. Massage is not applicable in pregnancy, it is not permissible where there is a collection of pus, in acute inflammations of the joints, inflamed veins, fragile arteries, wounds of the skin, nor, generally, may it be used in those conditions in which it is not desirable to increase the circulation or where for any reason the patient cannot bear handling, In cases such as we have cited, it may have injurious and even dangerous effects. In short, while massage, if properly applied, is of undoubted value in the treating of certain ills, nevertheless it must not be used haphazardly.

In respect of such ills as massage is applicable to, the effect of the manipulations is to promote nutrition, either general or local, to relieve congestion, to aid in the removal of waste products, and in the absorption of effusions and abnormal deposits. In the main, the influence is felt in the cutaneous, muscular and nervous structures, upon the digestive and the nutritive functions, and upon certain of the internal organs.

By alternate contraction and relaxation, the muscles are exercised as fully as possible without exhaustion, and the blood is propelled with greater activity, thus permitting its life-giving qualities to reanimate and restore vitiated and worn-out tissues.

Respiration and secretion are likewise increased and proper action of the intestines promoted. By reflex action on the nerves of sensation, massage frequently gives relief from pain. A rise of temperature usually accompanies a treatment by general massage, and where confined to a limited area, a local rise of a number of degrees may occur.

Methods of Massage.—Any knowledge of the technical details of massage which can be obtained from text-books or lectures is at best but superficial and theoretical, for the manual dexterity essential for the proper application of massage requires long and continued practice on the human body, and its intelligent execution also requires a proper knowledge of anatomy and physiology.

There are a number of methods of giving massage, but those generally in use may be classified as coming under the Swedish, German or French systems. The Swedish is vigorous, bracing and literally followed is only applicable to strong, muscular, hardy people. It exercises the muscles to the bone, and is supposed to give the same benefit at each treatment as would a walk of several miles, yet without producing like fatigue. The German treatment is really a modification of the Swedish system, some of the exercises being omitted and substituted by baths. The treatment is much more gentle than the Swedish and is suitable for most patients unless they have been reduced to a weakened condition by long illness. The French system is merely a delicate manipulation, chiefly used by French ladies in what is sometimes called "Beauty Culture," being designed to keep the skin free from wrinkles and blemishes. The French treatment as a rule is confined to the face, neck, arms and hands. It undoubtedly advantageously develops the parts treated and enables ladies who systematically make use of it to retain their beauty to an age that will rarely happen without. French massage is not of any special value in the treatment of disease but it sometimes is of benefit to invalids by giving them a refreshed feeling from the manipulation of the skin.

There can be no question as to the need of having some regular system—that is to say, in treating any one patient there should be some regular system followed out in the same way on each occasion when treatment is given. Just which system to use must depend upon the condition of the patient. It would be absurd to give the strong, vigorous Swedish treatment to one convalescing from a long illness. The full Swedish treatment even to the ordinary well man would be apt to bruise his muscles and therefore do more harm than good, yet to a football player or other athlete whose muscles were strong and hard the Swedish treatment would be of value. Common sense and consideration of the condition of the patient must be factors in deciding what to do in each case. With those who are weak or delicate the treatment must at first be very light from day to day, as the muscles become accustomed to the treatment, the pressure may be increased and more force used in manipulation.

Manipulation.—The room in which massage is given should be warm and free from draughts and care should be taken that the patient is really in condition to receive treatment. For instance, it is usually dangerous to give general massage in typhoid fever, owing to the tender condition of the bowels, and in cases of weak heart the increase in circulation from a vigorous massage might prove disastrous. Do not massage a moist skin. If the patient has been perspiring, first give a cooling sponge bath of alcohol or alcohol and water. Each part of the body before and during massage should be rubbed over with olive oil, vaseline, or cocoa butter. If there be a heavy growth of hair it may be advisable to shave, as otherwise manipulation may give pain and irritation of hair follicles, resulting in abscesses. If for any reason it is undesirable to shave, then extra precaution must be taken in connection with each and every treatment that irritation is not caused at the hair roots. Do not rub such parts in the opposite direction from which the hair grows. In giving massage over the breasts or navel use a circular motion from left to right. There need be no fear of getting too near the bone in massaging deep muscles, yet be very careful that the manipulations over the bowels and vital organs are not excessive. There is an erroneous idea with many people that the patient should always be rubbed toward the end of the fingers and toes. On the contrary the rubbing should be toward the patient's heart, because the veins which carry the impure blood back to the heart and lungs to be freed from impurities lie near the surface, and by rubbing toward the heart the desired return of the poisoned blood is accelerated.

The patient should be placed on a raised couch or table, narrow enough to permit of manipulation from either side. The patient should lie flat on the back with all muscles relaxed. The patient should draw his knees up when the abdomen is being treated, as this relaxes the abdominal muscles. After treating all parts of the front of the body, the patient should lie with the face downward and the muscles of the back receive their treatment.

Begin with the head and using the finger-tips rub the scalp in a brisk, energetic manner, so as to induce circulation. The face should be massaged with a rotary motion, commencing with the chin and working upward toward the ears until a healthy glow is obtained. The neck should then be treated in the same manner. The arms are next in order. Commence at the tips of the fingers and make a few strokes upward to the shoulder in order to start circulation. This also prevents chilliness and should be followed in respect of each part of the body as it may be exposed. Now commence the regular massage of the hands and arms, starting with the tips of the fingers and rubbing each finger joint separately with a circular movement. Work in the direction of the palm, following the palmar bones to the wrist, carefully manipulating each joint. It is at the wrist that the real work of massaging the long muscles begins. Grasp the arm with the two hands and manipulate the thumb sides away from each other, as if dividing or parting the muscles from the bone. This should be carried out through the entire length of the arm. This same parting manipulation applies also in the treatment of the legs and all parts where there are long muscles.

The next movement is that of wringing or twisting the muscles more or less in the same way that one might wring a wet cloth. The effect of this is to drive the blood from the muscles and stimulate the nerve centers. The next manipulation is that of kneading the muscles. Place one hand on the under side and one on top, and grasping with a firm grip of the hands use the balls of the thumbs to roll the muscles with a slow rotary motion from left to right. This manipulation should be repeated in respect of each and every muscle. Now go back to the tips of the fingers and commence a series of squeezes, working on each muscle with quick, firm grasps. This has a tendency to accelerate the flow of blood to the heart. The elbow joint should be given very careful attention and every spot thoroughly exercised. Now whip or flay the arms with finger-tips, using a light staccato stroke, which is best obtained by shaking the hands from the wrist. Before treating the larger muscles in this way they should be pounded with the sides of the open hands, the fingers extended. The motion is just as if one were chopping or hacking. The same procedure is carried out with the shoulder and hip joints, care being taken to work in as deeply as possible.

To massage the chest, the hands are laid flat, greater weight being placed on the thumb sides. Manipulation should be rotary from left to right. Little or no pressure should be given over the nipples. Now. using the thumbs and index fingers, grasp the flesh near the short ribs and by rolling motion work the muscles upward. Do this several times.

Work That is Necessary in Treatment of the Abdomen.—The patient having drawn the knees up to relax the muscles, the hands should be placed flat on the bowels near the hips, and using wrist force, the hands rolled firmly but gently forward to the tips of the fingers. In doing this use a rotary motion from left to right. Thorough manipulation should be given over the liver and if properly treated great benefit frequently ensues in cases of torpid liver, constipation and similar troubles, but in treating the abdomen it is better to err on the side of gentle manipulation than to run any risk of doing injury by severe work.

The legs are treated in the same manner as the arms, but because of deeper muscles, extra force is necessary. Each movement should be gone over several times when treating the legs and the large, deep muscles will stand thumping, hacking and slapping with the open hand to an extent that is not possible with the arms.

The patient should now turn on the face and the back of the body and the limbs treated in a similar manner to that just described. Commence with the back of the head and neck. Massage the base of the brain and all down the spinal column very thoroughly, the idea being to stimulate the nerve centers which are located here. The treatment of the back generally is the same as that of the chest. The spine should be flayed until it has a reddish glow, but do not use undue force.

In general massage the extremities should be treated first, the motion always being in the direction of the long axis of the bone and extending from the ends toward the body or trunk. After general massage has been given as above described, it will usually be found beneficial to use a few simple movements such as the following:

Commence with the hands. Rotate each finger from right to left four times, then the same number of times in the opposite direction. The wrist should be treated in the same way. Then raise and straighten the forearm, having the patient use slight resistance. Then grasp the wrist and elbow and extend the arm to its full length, and then move it in a large circle—four times one way and four times in the opposite direction. Treat the feet and legs in a similar manner. These movements are refreshing to the patient after the somewhat fatiguing manipulations of the general massage.

The duration of a single treatment should be from forty to sixty minutes for general massage. Local treatment of course takes less time. The main movements employed, as will be seen, are stroking, pounding, kneading and percussion. The tips of the fingers and the balls of the thumbs are principally, though not exclusively employed, and the action is a free one from the wrist. After treatment a period of rest of at least an hour should be observed.

It is sometimes asked whether massage may not be given through thin clothing without exposing the body. Such treatment is of course possible, but to gain the full benefit of manipulation it is essential to work directly upon the body.

Local massage is found very beneficial in many ills, and is recommended for congestion of the liver, gall stones, neuralgia, headache, nervous prostration, paralytic affection, St. Vitus' dance, writer's cramp, muscular rheumatism, stiff joints, sprains, curvature of the spine, obesity and various other troubles.

While massage is recommended for sprains, it is necessary to make sure that there has been no fracture. Having ascertained that there has been no fracture and that the bones are all in proper place, massage treatment may be used. Raise the ankle and massage evenly and lightly for half an hour or more, the idea being to drive the blood away from the spot, where it would be likely to settle because of torn ligaments. If properly executed, massage of a sprain will relieve pain and reduce swelling. Massage with the back of the thumbs, using a circular motion, also gently use the parting movement already described. In the case of a bruise the idea in massage is to thoroughly drive the blood through the bruised part until new circulation is established. Both in respect to sprains and bruises the part should be bathed and subjected to hot fomentations after the massage and then properly bandaged. In the case of a bruise after-discoloration will often be avoided by binding a piece of well-pounded raw beef over the part for a few hours.

In the foregoing description of general massage some particulars are given as to massaging the face, but this is not intended as indicating the manner of using massage to retain or increase the beauty of the face. In the chapter entitled "Self Care for Women" there will be found a description of massage for these purposes, and which is quite distinct from the use of massage in treatment of disease as described in this present chapter.

MEDICAL SCHOOLS

PART IV.

CHIROPRACTIC

Chiropractic was discovered by Dr. D. D. Palmer at Davenport, Iowa, in 1895.

This science is based upon the fact that all disease is due originally to a condition in the individual, rather than to external influences. This condition is recognized by all schools of medicine as the "predisposition" or "lack of resistance." To illustrate: Thousands of persons continually inhale the germs of tuberculosis, yet only a small per cent. contract the disease. Scientists have answered this by showing that the germs only affect those who have weak lungs or a lack of resistance. Any physician will tell you that germs do not affect healthy people.

If this statement can be accepted, then why bother so much about the germs that do not affect 99 per cent. of the people when it is admitted that there is a condition existing in the other 1 per cent. that makes them predisposed to disease and easily affected. Why not find out and correct the cause of this condition or predisposition and so allow nature to use her natural protection against these baleful external influences.

Chiropractors, therefore, feel that this condition of predisposition is by far the most important part of all disease, and their work is confined solely to its correction, for even after a disease has fully developed, if this condition can be eradicated, nature can readily restore normal health.

While this condition of predisposition has been recognized by medical practitioners for many years, there is nothing in medical literature that will tell you what this condition really is.

Dr. B. J. Palmer, a son of Dr. D. D. Palmer, has been the greatest factor in the development of Chiropractic as a science, and was the first to discover the real fundamental cause of disease. He maintained that the predisposition was simply a lack of function and that it was due to a partial displacement of a vertebra, with the result that the spinal nerve emitting from the cord would be "pinched," thereby interfering with the flow of nerve impulses.

Dr. G. H. Patchen, of New York, who has done a great deal of research work in Chiropractic, state the basic principles of this science as follows.:

1st. That all nerves originate in the brain, converge at its base, forming the spinal cord which passes out of the skull, through an opening called the foramen magnum, into and through the center of the spinal column. From the spinal cord nerve filaments emerge, on each side of the spinal column, through a small opening between each consecutive pair of vertebræ, from whence they proceed to the parts and organs into which they severally terminate.

2d. That the vitality and activity of every organ, tissue and cell of the body is maintained and controlled by an inherent force or energy, which is transformed or individualized by the brain, and then transmitted to these respective parts, in the form of mental impulses, through the channels provided by the nerves.

3d. That when the transmission of mental impulses is normal both in volume and rapidity of delivery, or, in other words, when 100 per cent. of mental impulses reaches each organ and tissue in the body in a normal speed, all functions are perfectly performed, with a result which is known as health. But when the normal flow of mental impulses is interfered with, in any manner, the vital activities of the tissues and organs which these mental impulses severally maintain is either increased or diminished according to the degree of interference, the result in either case being a condition which is recognized as some form of disease.

4th. That the only place where interference with the flow of mental impulses to a degree sufficient to cause deranged functional activity, or disease, *can* occur, is at the intervertebral foramina, the little openings between the vertebræ,. on either side of the spinal column, already mentioned. At any of these places a slight misalignment or sublaxation of a vertebra may so press upon the nerves passing out through it as to interfere, more or less seriously, with their conductive power.

5th. That Chiropractic affords an exact and scientific method of determining the location of any vertebra which, on account of its misalignment, is responsible for nerve compression, and also an original, unique and most effective manner for correcting this abnormal condition, by means of the hands alone, using either the spinous or transverse processes of the vertebræ as handles or levers.

Chiropractors correct these vertebral displacements by placing their patient on a divided bench and giving with their hands what they term an "Adjustment."

MEDICAL SCHOOLS

PART V.

HYDROPATHY, WATER-CURE OR HYDROTHERAPY.

History.—The use of water in the treatment of disease was practiced by the most skilled of all the Greek physicians, Hippocrates, 400 years before the time of Christ. Zechariah spoke of Christ as the healing fountain, and, in the thirty-sixth Psalm, David speaks of the fountain of life, showing that water was considered a healing agent even at that time. It was very extensively used by the Romans at the time of their highest development. During the middle ages it fell into dissue, along with many other rational agents. From time to time, however, men of more penetration than their fellows tried to restore it to general use, but usually only succeeded in arousing interest for a short time. Dr. James Currie, well known as the editor of an edition of Burns' poems, who practiced in Liverpool from 1780 to 1805, was the most prominent advocate of hydrotherapy during the eighteenth century. He published a book entitled "Medical Reports on the Effects of Water, Cold and Warm, in the Treatment of Fevers."

Father of Modern Hydrotherapy.—But it was a German farmer, named Priessnitz, who must be called the founder of modern hydrotherapy. In the year 1840 nearly sixteen hundred persons visited Graefenberg to be treated by him. His patients came from all parts of the world, and when cured they became missionaries of the new treatment. Schools were started not only in Europe, but in this country also. There is every reason to believe that the water-treatment has now secured a permanent place among the remedies used in combating disease. Professor Wilhelm Winternitz, of Vienna, is to-day the leading advocate of this method of treatment.

Definitions.—Hydrotherapy is not a good term, since it is derived from two Greek words, which mean respectively, *water* and *to suffer*. It would, therefore, mean strictly water-suffering. The term water-cure is a good one, but may not be considered entirely scientific. Hygienic medicine is another term sometimes used for this method of treatment, but it is not sufficiently distinctive. A far better name, however, is Hydrotherapy, which means *healing by water.* This expresses with entire correctness the end sought by those who practice this form of medication. It is not confined to the use of *cold* water only, as some have supposed. That idea may have arisen from the fact that Priessnitz was a special advocate of cold water.

Hydrotherapy.—*Hydrotherapy includes the application of water, internally and externally, in any form and at any temperature.* It may vary from solid or fluid to vapor; from ice to steam. Mineral waters are not used in hydrotherapy. They are not needed. There is, however, no objection to such waters being used if they are available.

Physiology.—The effects of water upon the body are produced by its heat or cold and the manner in which it is applied. In order to understand this action it is necessary to consider the structure of the skin or outer covering of our bodies. It is an exceedingly complex and sensitive part of us.

The Human Skin.—The skin is very elastic, and this is due to the presence of a network of elastic fibres in its deeper parts. Many very small muscles are also present in the skin. When they all contract at once the appearance known as "goose-flesh" is produced. Great numbers of tiny glands are present, and their openings on the surface are called pores. But more important than any of these are the fine blood-vessels and nerves which are so numerous that it is impossible to pass the finest needle point into the skin without causing pain and bleeding. Through these the application of water can affect the entire system most profoundly.

FUNCTIONS OF THE SKIN.

Nerve Endings.—The fine nerve endings in the skin guard the body like an army of sentinels. They warn us of too great heat or cold, or draughts or threatened injury. Wherever these nerves are the more numerous there the sense of heat and cold is the more acute.

Skin Excretions.—The chief materials given off by the skin are watery vapor and urea, both of which are contained in the sweat; also a gas known as carbon dioxide. Urea, however, is more freely removed from the body by the kidneys. The amounts of these several constituents can be increased or decreased in a wonderful degree by applications to the skin of water at varying temperatures.

Skin a Heat Regulator.—The human body is remarkable in its power to live under conditions so exceedingly variable. It can exist amid the burning heat of the tropics, or surrounded by the icy blasts of Greenland. The skin is one of the main agents in making this possible. So remarkable are its powers that in a hot climate it helps to cool the body, while in cold climates it prevents the waste of heat.

PROPERTIES OF WATER.

Value of Water.—The value of water as an agent in treating bodily ills rests in: First, its power of absorbing and transmitting heat and cold; one pound of water will absorb eight times as much heat as a pound of iron, and yet not be any hotter than the iron; second, its flexibility; water can be used in the solid, liquid or gaseous state; its volume increases seventeen hundred times in passing from ice to steam; third, its fluid form enables us to control it so easily and well that we can apply it at pleasure to any portion, or all of the body, as we desire, and for any length of time; fourth, the ease with which pressure can be applied to any part of the body through the force of the stream used. Any or all of these properties can be used at the same time in treating diseases by hydrotherapy.

Action of Water in Health.—The most important means employed in hydrotherapy is the application of water to the skin surfaces. It acts upon the nerve endings by heat, cold and impact. The nerves transmit the effects to the brain, where it may be switched off and sent to any part of the body. Thus the amount of blood at the body surface can be increased or decreased. The speed of the blood current can be altered and the blood itself improved. More blood can be sent to the brain, thus securing greater mental activity; or less blood being sent there sleep will follow. The pulse can be increased or decreased in force. The breathing may be increased in frequency and depth. The muscular system, too, is affected by the increased activity and the kidneys do more work. The body temperature can be directly affected. It is raised by hot and lowered by cold water. Three conditions, however, will be found to modify the last statements; these are the degree of temperature used, the length of time it is allowed to act and the manner in which it is applied.

THE PRACTICE OF HYDROTHERAPY.

Ablution.—This is the simplest and most widely-used method of applying water. It is effective in many diseases and is a good introduction to the other more active measures.

Definition.—Ablution is the application of water by the hand, with out or with a bath-glove or washcloth. Sponges are not rough enough. The bare hand or a rough cloth can be made to produce just as much friction as is desired.

Method of Applying.—Have ready several vessels of water at the temperatures desired. In acute fevers with a temperature above 101 degrees Fahrenheit, first the patient should be stripped completely and covered with a blanket, remove the pillow, roll the patient upon his left side in the portion of the bed away from the one where you desire to work; lay upon the bed a rubber sheet or oil cloth, covered by a blanket. This should be so placed that its near edge will overhang the bed, while the remainder is tucked against the patient's back. He is then rolled over again toward the nurse, while the rubber sheet and blanket are smoothed out on the opposite side of the bed. The patient can now be rolled upon his back, and you are ready to begin the bath. If the patient is a child he can be lifted from the bed, wrapped in a blanket, while the rubber sheet is being adjusted. Beginning with water at 65 degrees, first wash the face, dip the hands into the water and rapidly but gently apply it to the part, using gentle friction; next go to the chest, forearms, back, abdomen and legs as far as the knees. Repeat the process in the same order, but with water at a lower temperature, and so on until water at a temperature of 50 degrees is used. The ablution is continued until slight chilliness is produced. When the effect is sufficiently marked the patient is dried and allowed to remain perfectly quiet, with only a sheet or light blanket over him. Do not attempt to replace the nightgown until reaction is fully established. If sleep follows let the patient remain undisturbed until he awakes.

In vigorous persons with high temperatures the effect may be made more pronounced by not drying the parts, but by simply spreading a sheet over the patient and allowing him to dry gradually. Care must be taken not to produce chilling.

In Chronic Affections.—Ablution is useful as a beginning treatment. It may be used in the following way: A bed is prepared as described above; the patient is then stripped and laid upon the under blanket, with the arms raised above the head. The blanket is then folded over the body and between the limbs, hugging the surfaces closely at all points. The arms are now brought down close to the sides and the other side of the blanket laid over all and tucked in around the neck and under the feet. This should be done in a warm room and the patient given sips of cold water to drink at intervals of a few moments to promote sweating. More covers may be used if needed. After a half to one hour the patient's face is bathed in water at 50 degrees Fahrenheit. The blankets are now loosened and each part—arms, chest, back, abdomen and limbs—bathed in turn in water at 80 degrees. They are then dried and replaced under the blanket. A dry rubbing with hands or a towel follows and a short period of exercise is then ordered if the patient is able. If unable to exercise he should remain in bed and take a cup of warm liquid food. Morning is the best time for this procedure, but is useful whenever it can be had.

General Ablution.—The next step in the training is a general ablution. The patient stands in twelve inches of water at 95 degrees, and is quickly washed from head to foot by pouring water upon him and rubbing at the same time. The heat of the water will vary with the patient and his length of training, from 80 degrees to 50 degrees. The great importance of care in these measures cannot be too deeply impressed upon all who undertake them. In chronic conditions the patient must be wooed back to health slowly, realizing all the while that a very small accident may destroy the results of weeks of patient care. It is not sufficient to advise a sick man that he should bathe in cold water every day. He must know just how, when and where, and also how long the bathing should proceed, and what changes are needed and when they should be made.

When May Ablution be Used?—General ablution may be used in febrile diseases to reduce fever and at the same time prevent its rise. In mild cases of infectious fevers like measles it may be all that is necessary throughout the attack; typhoid fever, in which the temperature does not go above 102½ degrees; in severer cases more extended baths are indicated. In chronic cases of anemia and chlorosis, which are due to poverty of the blood, tuberculosis of the lungs, rheumatism, gout and loss of nervous tone. In the most severe cases of the last class it is a good introduction to more severe treatment.

The Half Bath.—How applied: Into an ordinary bath-tub enough water is run to cover a patient's hips and limbs. The temperature may vary from 85 to 70 degrees. The patient enters the bath, or, if too weak, is placed in it. A wet towel is wrapped about his head and the nurse proceeds to bathe his face and then dash the water over his body with a ladle. At the same time the patient's back is rubbed by the attendant, while the patient himself rubs his own chest and abdomen. Cold water is added gradually and the process continued until the patient shivers. He is then removed before chilling ensues and dried before returning to the bed. This is a more stimulating procedure than ablution.

When Used.—In chronic diseases, after the wet pack or procedures yet to be described, the half bath naturally follows to insure the closing of the pores and general reaction. It should continue from five to ten minutes. The patient should be rapidly dried, and in fever cases this may be done in bed.

Affusion.—Definition: Affusion is a bath by pouring.

How Applied.—The patient may sit or stand in an empty tub or lie upon a rubber-covered cot while water is poured upon his head, shoulders and body in a stream from a bucket, pitcher or basin. The temperature of the water may be varied from 65 to 50 degrees, and may be poured from different heights. The stimulation will vary with the temperature and height. The reclining and sitting postures are used for acute cases and the standing for chronic.

Indications for its Use.—When patients are unconscious or delirious and seem absolutely exhausted, ablutions will often result in very surprising improvement. In advanced fever cases, when collapse is threatened, instead of injuring the heart action, they help it materially. In the collapse of children's diseases a warm half bath, with affusions over the head and chest, will often restore completely. In diseases of the lungs, when breathing is difficult; in scarlet fever, with very high temperature, they will bring relief when all other methods fail. They are a better stimulant to the circulation than the most powerful medicines. In brain fever or meningitis, sunstroke and the brain symptoms of pneumonia they are the most useful agents known.

The Sheet Bath.—Method of applying: Protect the bed by a rubber sheet, spread a blanket upon it, have ready several linen sheets, a basin, a tub of water as cold as desired, 50 to 80 degrees, and nearby on a chair place a cup and sponge. The patient should be undressed and ready, wrapped in a blanket or woolen gown. Wash the face with cold water and wrap a cold wet towel about the head. A sheet is now quickly wrung out of the water selected and spread evenly upon the bed. On this the patient is laid, and while he holds his arms up over his head one side of the sheet is brought over and tucked in on the opposite side and between the limbs. The arms are then brought down, and the opposite edge of the sheet is carried over and tucked in around the patient's neck and feet. In feeble patients the arms may be left out and bathed separately during the process. The first effect of this procedure will be a shock to the surface nerves by contact with the cold wet sheet. For a moment the breath will come in gasps and some shivering may follow. These quickly pass away as the nurse begins to rub the body by passing the open palms swiftly over all parts of the body and limbs. As soon as reaction follows, begin to pour water at 50 or 60 degrees temperature from the cup or squeeze it from the sponge over the body, rubbing at the same time with the other hand. Keep this up until the patient is cooled as much as desired or until he is on the verge of a chill. The combination of friction and cold water application through an enveloping sheet is an admirable way of securing the abatement of fever. To increase or prolong the effect allow the patient to remain in the cold sheet, covered by a blanket, from a half to one hour. If he sleeps do not disturb him until he awakes. When it is desirable to end the bath, remove the sheet, dry the patient quickly, place him in a dry bed and cover lightly.

Drip Sheet Bath.—How applied: This is applied while the patient is standing. The room should be at 70 degrees or over. Place the patient, completely stripped, in a foot-bath of water at 100 degrees Fahrenheit and six inches deep. A sheet is now removed from a bucket of water at 70 degrees and rapidly wound about the patient in the following manner: The right arm is held above the head while the edge of the sheet is placed upon the right breast. The sheet is then carried backward under the arm, which is now lowered, and serves to keep the sheet in place. The edge is now carried over the left shoulder, across the breast, over the right shoulder, and tucked in snugly about the patient's neck. As soon as it is in place the nurse proceeds to stroke the body rapidly from head to foot over the sheet and slap it more or less vigorously. Water at 60 degrees is poured upon the head at intervals of a few moments and the rubbing continued between the dashes of water. The process is kept up from five to ten minutes, according to the condition of the patient and his requirements. At first it should be very short in order not to weary him; gradually it can be lengthened as the power to react increases. After the bath dry rapidly, then rub with a warm towel or sheet. This bath is applied once a day and best during the afternoon.

Uses of the Drip Sheet Bath.—Many chronic ailments are benefited by it, such as chlorosis, anemia, neurasthenia, intestinal catarrh, melancholia, neuralgias, pulmonary and bronchial diseases. Its application can be varied in a great variety of ways.

The Cold Rub.—Definition: This is a modification of the drip sheet and is generally applied immediately after the patient arises in the morning and while he is still warm.

Application.—A coarse linen sheet is wrung out of water at 60 to 75 degrees and quickly wrapped about the patient in the manner described above. Friction is now applied rapidly over the sheet, accompanied by slapping, the object being to produce a definite reddening of the skin. This is only a short process, and when finished the sheet is dropped and the patient quickly dried. After dressing and drinking a cup of hot milk or cocoa the patient should take a walk in the open air.

Uses.—In anemias of feeble patients, tuberculosis of the lungs, any case lacking in blood.

The Wet Pack.—How applied: The method is very similar to that described in the preparation for ablution. The body is, however, first enveloped in a wet sheet in the manner described, so that it will lie in contact with every part of the body. The sheet should be wrung out of water at 70 degrees, or even as low as 60 degrees. Over this a blanket is folded so snugly that all outside air is excluded. A wet towel is folded about the head like a turban. If the patient feels cold more blankets are placed over him. He should remain in the pack from a half hour to an hour. It should be followed by some form of cold application to restore tone to the skin. A half bath, heat bath or cold ablution will serve this purpose.

Uses.—If it is desired to abstract heat the sheet should be 60 to 70 degrees. When it has become warm replace by one a few degrees colder on a fresh bed, and so on until the desired body temperature is reached. It is estimated that five baths, each of ten minutes, will equal a full bath of fifteen minutes' duration. With temperatures varying between 100 and 103 degrees this is an excellent procedure. When used to quiet restlessness and promote sleep the higher temperature of water is used, say 70 degrees, and the patient is allowed to remain in the pack until he awakes; he is then given a rapid cold ablution. The wet pack is useful in most of the acute fevers at the outset. The addition of salt or other medicines to the water is sometimes advised.

In Chronic Diseases.—In these cases the pack should not be quite as low in temperature. The cold stage lasts longer, reaction comes on more slowly, but when it does the soothing and refreshing effect is very evident. The whole body is in a sort of water poultice. It is valuable in functional nervous diseases, hysteria and some heart troubles. In tuberculosis of the lungs, with fever, it is found very effective. In diabetes, rheumatism, gout and digestive disorders, anemia and chlorosis it has proved very effective.

The Wet Compress.—This is probably the most extensively used of all hydriatic procedures. It is in fact a local wet pack.

Method of Use.—Several folds of old linen or cotton, gauze or cheesecloth, sufficient to cover the part to be treated, are wrung out of water at the proper temperature and placed upon the part. A dry flannel or piece of oiled silk or rubber band sufficient to cover the compress follows, and over this a retaining bandage.

The Head Compress.—Take a linen towel wrung out of water at 60 to 75 degrees and apply it like a turban to the head. This is used to prevent congestion of the brain and during all hot baths and wet packs.

The Throat Compress.—It should be made and applied as follows: A piece of flannel, 8 x 24 inches, is made ready; then a compress of soft linen, four inches wide and long enough to reach from one ear under the chin to the opposite ear, is soaked in water at 60 degrees and laid upon the throat; the flannel bandage is next placed on it and drawn up snugly over the head, to be fastened by pins. A slit for each ear to be cut in the flannel if it is uncomfortable. Two bandages are made so that one can be dried while the other is in use. In children it is wise to first put a band around from the back of the head to the forehead, to which the upper bandage can be pinned at the intersections.

The Chest Compress.—Make two jackets out of three folds of old linen. They should be large enough to reach from the neck to the waist and entirely around the chest. At the points, by measure, where the two armpits will come cut a deep slit so that the arms may sink in far enough to allow the ends to be pinned over the shoulders from front and back. Cut two pieces of closely-woven flannel of the same shape as the jackets, but about an inch larger in every direction. Roll up one of the compresses and wring it out of water at 60 degrees. Spread it upon one of the flannel covers and roll them up together halfway. Now, with the patient gently turned on to one side, spread the unrolled portion on the bed behind him, so that he can be rolled back upon it in just the right place, to fit. Now unroll the remainder and bring the ends together across the chest, fastening them with safety pins. Also pin the portions at the top over the shoulders. This compress should be changed every half hour when the temperature is 102 degrees or over, hourly when the temperature is below that and down to 99½, when it should be stopped. Always have the fresh compress entirely ready before loosening the first. Thus, one movement of the patient will be sufficient to remove the old and apply the new compress. Use fresh water at 60 degrees each time and always rinse the compress between using to keep it clean. Continue the changing night and day unless the patient is asleep. By being so thorough and careful the patient's chest will never be without a compress except at the brief moment when one is being rolled from and the other being unrolled upon his body. If stupor and low muttering delirium are present, use water which is colder than 60 degrees, also throw a few dashes of ice water on the chest before placing the fresh compress. When insomnia is marked use water slightly warmer than 60 degrees. These methods are used in croupous and broncho-pneumonia.

The Hot Fomentation Compress.—Two or three folds of flannel, as large as desired, are wrung out of boiling water, making it as dry as possible. The part should be anointed with vaseline and the hot flannel applied as quickly as possible, so as not to lose any of its heat. Surround the patient with a dry blanket over the compress. It may be necessary to lead up through several temperatures before the very hot compresses can be used. These compresses should be renewed every ten or fifteen minutes until the patient sweats. After the pain is relieved the body may be carefully uncovered and quickly rubbed dry or washed with water at 75 degrees, accompanied by friction. In sciatica nothing exceeds this method of treatment. In lumbago and other muscular rheumatisms a hot fomentation each night will soon result in relief.

The Heart Compress.—Wring out a piece of linen from water at 40 degrees and lay it upon the heart. On this place a rubber coil and pass ice water through it. A flannel binder will keep all in place. This is especially useful in irregular heart action, due to nervous conditions, in rapid heart action in some very weak patients. It will also be effective even when digitalis has failed. It can be used in a course of severe fevers, such as typhoid.

The Cold Full Bath.—By this is meant the placing of the entire body in water 10 to 30 degrees below the normal body temperature for from five to twenty minutes. It is this form of bath which has revolutionized the treatment of typhoid fever. Its application varies with the ends in view. In acute cases it should be applied as follows: A movable bathtub is provided, if possible, and rather than use the ordinary house bathroom an improvised bath apparatus is advisable.

Method of Applying a Tub Bath.—When the tub is ready the patient is stripped and a breech-cloth applied, or he may be left enveloped in a sheet. A stimulant is then given, either hot coffee or half an ounce of whiskey. Two attendants then lift him carefully from the bed and place him directly in the bath. A towel soaked in cold water is bound about his head. The head is supported by a strip across the tub or a rubber cushion. If neither of these are available one hand of the attendant must support the head while the other is employed in the rubbing process. Both attendants vigorously rub the patient from head to foot. From time to time fresh cold water is poured upon the head and face. The rubbing is an absolute necessity in this form of bath. There is always some shock when a patient is placed in cold water, but under brisk rubbing the surface is warmed and stimulated, so that there is a continuation of little shocks and reactions. As rapidly as the surface is cooled the blood is pushed forward and fresh hot blood from the deeper parts takes its place and is in its turn cooled. The process continues thus until the temperature falls sufficiently or the bath is continued long enough, or the danger of severe chill makes it wise to end the bath. The bed in the meantime has been spread with a blanket and dry linen sheets; the patient is lifted from the bath and placed upon the bed. The sheet and blanket are then folded over from one side under the raised arm and tucked between the limbs, then the other half over the arms, so enveloping the whole body. Very frequently he will fall asleep. If shivering is prolonged it is an evidence that the bath has been too cold or too long, and a change should be made at the next application. If reaction does not come on promptly hot water bottles or bricks should be placed to the feet and between the limbs. Friction must always be used in the cold bath treatment. If it is neglected the bath will really be a cause of increasing the fever by closing the pores and contracting the surface blood-vessels.

The Warm Full Bath.—The warm bath is one in water a little below the normal body temperature. Hot baths are those with the temperature above the normal body temperature. These baths should be arranged so that the temperature may be increased after the patient is in the water, either by kettles of hotter water or by gradually increasing the water from a hot faucet. They should last from five minutes to an hour, according to the object sought and the conditions being treated. Their general effect is soothing, although the very hot baths are stimulating; for example, those of the Japanese at 130 degrees Fahrenheit. Warm baths are useful in relieving pain and nervousness, reducing temperature, the latter especially in children and infants. Care should be taken to dry thoroughly after baths and protect from draughts.

The Hammock Bath.—The hammock bath is a means of applying the effect of water through long periods of time. An extra deep tub is used, the patient is swung upon a strong sheet which is fastened to the edges of the tub or to a framework over it, so that the water surrounds him up to his neck. Constant renewal, by the inflow of water at a given temperature.

The Douche.—This is the application to parts or the whole of the body of a stream or streams of water at varying temperatures. Moreover, the stream should be under different degrees of pressure. When the stream is made to take a form which is broad and flat it is called a fan douche. This is made by partially closing the outlet or nozzle by the thumb or finger. The shower bath is another form. In this the pressure ought to equal the fall from a cistern fifty feet above the outlet. The needle or circular bath is one in which the water is forced against the body in fine jets from all sides at once. The ascending or bidet douche is one in which a jet is directed upward from below, usually while the patient is sitting, and is used in rectal treatment to overcome piles.

The Hip-Bath.—The hip- or sitz-bath, as its name implies, is one applied to the lower part of the body only. The bath is first prepared, then the patient stripped, a wet towel bound about the head and a warm blanket about the feet. Sometimes it is wise to add a hot-water bottle with the foot blanket. When the patient is in the bath the under side of the knees should not rest upon the tub; if they do a stool should be placed under the feet. Rapid friction should be used over the parts in the water by an attendant and also the patient himself. When the bath is over dry the patient and have him return to bed for a short rest, or, if an invalid, remain there. Hot baths are 104 to 110 degrees Fahrenheit, cold baths as low as 50 degrees. All grades between these are used. The duration of hip-baths may vary very greatly. Hot hip-baths are used to overcome pain in the abdomen and pelvis, to reduce inflammation of the pelvic organs, to cure cystitis, urethritis, uterine hemorrhage, diarrhœa and dysentery, and especially vesical straining.

Uses.—Cold hip-baths of short duration are stimulating and are used to overcome muscular paralysis or loss of tone, in prolapsus of the rectum, spermatorrhea, prostatorrhea, impotence, weakness of the uterine ligaments, prolapsus of the uterus, the leucorrhea of chlorosis, stoppage of the menses, passive bleeding, constipation and flatulency.

Steam.—Vapor of water, with or without medicines, has been used for softening the mucus in case of croup, laryngitis, false-croup and diphtheria. A tent or canopy is arranged over the patient and the steam conducted under this from one or more kettles kept heated by alcohol lamps or any other available method. When nothing else can be found heat some bricks or stones and drop them into buckets of water under the tent until sufficient steam has been generated. Steam is also used to check bleeding by some surgeons; also as a cleansing agent in some operations for cancer.

The Turkish Bath.—This, as its name implies, has come down to us from the Turks, and they obtained it from the Arabians. It consists first of a soujourn for a considerable time in a hot-air chamber, with a temperature from 105 to 125 degrees. The patient remains in this room until he is in a thorough perspiration; he is then laid upon a table and an attendant rubs him thoroughly with his hands and kneads the flesh from head to foot. The attendant scrubs him with soap and water, using a brush, and finally washes him off with warm water. After another short stay in the hot room the patient stands for a few moments under the shower bath and is then wiped dry. He then passes to what is known as the "cooling off" room, where he lies quietly upon a cot; the temperature of this room is usually 80 degrees. A quiet sleep will often follow the bath, and after it the patient should be rubbed with alcohol and take a cup of coffee or chocolate before dressing and leaving the bath.

Russian Bath.—This bath differs from the Turkish in that the first chamber is filled with steam instead of dry air, and the final process before drying is a cold plunge into a tank or swimming pool. The latter may be replaced by pouring cold water over the bather. The last two methods are used to reduce flesh, particularly in corpulent individuals. In well-nourished, rheumatic and gouty patients, in neuralgic affections, in persons of this same class, these baths will be especially beneficial.

HYDROTHERAPY IN SPECIAL DISEASES.

Typhoid Fever.—The following methods may be used in treating this disease:

1. Ablutions and compresses until the temperature has reached 103 degrees, or when the cold baths are impossible.

2. The cold bath; a bath at 65 degrees, lasting fifteen minutes, whenever the temperature rises to 102½ degrees, in the rectum.

3. If this method is not advisable the Ziemssen half-hour baths may be used, where the water is reduced gradually from 90 to 70 degrees.

4. In very weak, nervous patients, coming under treatment in the second week or later, only five- or ten-minute baths at 88 to 95 degrees, followed by short cold effusion, or a wet pack, should be risked. The temperature and duration of the bath can be altered with the improvement of the patient.

5. The hammock bath, as described above, can be substituted in treating very timid patients.

Measles.—With a temperature at 103 degrees a bath of ten minutes in water at 95 degrees is very soothing. It should be repeated every four hours and the water temperature reduced five degrees each time until the desired effect is produced. The patient generally falls into a quiet sleep after such a bath. When the full bath cannot be given ablution may be used rapidly, but without friction. Cerebral symptoms should be overcome in this way. The half-bath can be very successfully used in measles. This may be repeated oftener than the full bath. Do not wait too long before beginning the water treatment. If the patient's nervous tone is kept high by the above methods there will be less likelihood of any lung complications beginning.

Scarlatina.—In the early stages, before the diagnosis is sure, a warm full bath at 100 degrees, for a few minutes, will quiet the patient wonderfully. If the heart action is feeble, the bath should be followed by a few dashes of cold water over the shoulders and chest, or the latter method may be used without the full bath. In urgent cases an effusion may be used every hour until reaction is sufficient and the heart is relieved by bringing the blood to the surface. When the eruption is well out and the mind clear there is not much need for treatment; but when temperature is high or mind clouded and congestion evident ablutions with water at 90 degrees, gradually reduced to 75 degrees, are very effective. The time occupied in a single ablution should be short, as it is the nervous system that we wish to affect more especially. The number of ablutions will depend upon the result obtained. It may be necessary to have them repeated every hour.

Pneumonia—1. In Children.—Begin bathing when the temperature reaches 103 degrees, or earlier if nervous symptoms are marked. The bath should begin at a temperature of 95 degrees and last for ten minutes. They should be repeated every four hours, and the temperature of the water decreased two degrees each time until 80 degrees is reached. Never omit friction. Between the baths, in bad cases, use the chest compress every one or two hours. If alarming symptoms appear, or heart failure

is feared, place the child up to the waist in a bath at 100 degrees and dash several basins at 75 to 65 degrees over the shoulders. Follow this with rapid friction and drying. Repeat this process as often as every two hours if necessary. Crying and coughing are caused and they are a wonderful help in relieving the congestion. In less severe cases, wet packs, ice jackets or cold sponging may be sufficient.

2. **In Adults.**—The greater difficulty in applying baths to adult patients and the fact that practically as good results can be secured in another way, have led to the adoption of the latter plan, which is the chest compress. The full bath can be reserved for the more urgent cases. The warm half-bath and cold effusion to the chest are also exceedingly valuable in emergencies.

The Chest Compress.—This has been described in the foregoing pages. Do not neglect the careful observance of all the details. Usually a temperature of 60 degrees is best, but in cases with stupor or muttering delirium a lower temperature will be needed. Dashes of ice water can be used when the compress is being changed. If there is sleeplessness or excitability allow the compress to remain for two hours, or even longer, without changing; this will increase its soothing effects.

Acute Cholera Infantum.—The element of shock in this disease is so decided that the attacks resemble sunstroke. The internal temperature is often very high indeed. Reaction must be secured quickly or it will be too late. It is sometimes necessary to proceed with these measures before attending to any of those which logically precede, as indicated above. Prepare a bath at 90 degrees, wrap a cold cloth about the child's head and have it supported by an assistant. Lower the child's body into the bath, holding it by the hands and feet. Begin gentle friction over the different parts of the body, arms and legs to the elbows and knees. Have another assistant remove water from the bath and replace it with ice water until the temperature falls to 80 degrees. Continue the bath ten minutes, or if shivering occurs before that time remove the child. If the temperature has been very high follow the bath by a wet pack and a blanket over that. Put hot bottles to the feet and keep the head cool. If the symptoms are not so urgent a wet pack alone may secure the desired reaction.

Sunstroke.—Put the patient upon a rubber-covered cot, cover him with a sheet, dash upon him, at intervals, dipperfuls of cold water, in the meantime keeping up constant friction over all parts of the body and limbs. Keep an ice-bag or cold cloth upon the head, and occasionally pour ice water upon the forehead from a height of six feet. The friction must not be neglected under any circumstances. When the rectal temperature has fallen to 104 or 103 degrees wrap the patient in dry blankets, with hot bottles to the feet and limbs. Usually the patient will fall asleep and break out in a gentle sweat. If reaction does not occur and the temperature again rises repeat the above treatment. Continue thus until the temperature remains down. As soon as the patient can swallow give small drinks of ice water at frequent intervals.

Anemia or Lack of Blood.—Here we must distinctly understand that we are not to abstract heat from the body. On arising in the morning the bath should be taken as follows: In a room the temperature of which should not be lower than 68 degrees. Let the patient stand in water at 100 degrees and pour over him water at 80 degrees and at the same time have him rubbed thoroughly and let him rub himself. Reduce the temperature of the water 2 degrees each day. Dry rapidly after the bath, dress and let the patient take a short walk in the open air. In weak patients the dry pack may precede the ablution.

Consumption.—To give a consumptive patient full benefit of the water treatment it should be begun and carried out systematically. If the body is already well cared for the treatment can begin at once, if not, a good warm water and soap bath must be given on the first day, and then the following day proceed thus: Strip the patient entirely naked, wrap him in a blanket, cover him with other blankets and give small drinks of water at short intervals, say every ten minutes. During this dry pack the windows may be wide open even in winter. After an hour has passed wash the face with quite cold water and dry. Have a basin ready with water at 75 degrees, remove one arm from the covers and wash it briskly with the wet hand or with the hand covered by a bath glove. Rub well and then dry and replace. Do the same with the other arm, then the different parts of the body successively. At the end rub the entire body with a rough towel. Repeat this treatment daily until, by reducing the temperature 2 degrees daily, the water is used at 60 degrees.

Neuralgia.—In this trouble great relief has resulted from the various water methods of treatment. Especially good results have followed when rapid contracts of temperature have been used like that obtained in the Scotch douche. In sciatica this treatment has been wonderfully successful.

Chronic Rheumatism and Gout.—These cases may be divided for treatment into two classes:

1. **The Well-Nourished Subjects.**—These should be given full baths for from eight to fifteen minutes, in water at 95 degrees, gradually raised to as high a temperature as can be borne; gentle massage to be given during the bath. Allow the patient to drink large quantities of water both during and between the baths. The bath should be followed by sweating between blankets. These baths should be given daily, or less often according to the patient's condition and progress. Between the baths cold wet compresses at 65 degrees can be bound upon the affected parts and allowed to remain until almost dry. Such compresses may be used during the night. A sweat in the cabinet for five to fifteen minutes followed by the douche at 100 degrees, reduced to 90 degrees during the progress of the bath, will be found very useful after the above courses.

2. **The Poorly Nourished.**—Hot baths must be used very cautiously and infrequently in this class of treatment. Once or twice a week will be found sufficient. Ablutions gradually decreased in temperature are most effective. Scotch douches to the joints, followed by cold compresses, should also be used. As the patient becomes more used to lower temperatures the baths may be made more stimulating. More food will be taken, digestion improved and the patient gradually increase in weight and strength.

Dyspepsia.—Catarrhal and nervous types of this diseases are recognized. The treatment is similar to that for anemia. As a local stimulant the Scotch douche over the region of the stomach is very effective. The hygienic rules must be carefully remembered during the treatment of this condition. The daily cold plunge bath, or its equivalent, will be a great help.

THE INTERNAL USE OF WATER.

Effects.—Drinking cold water slows the pulse and makes it stronger and fuller. Hot water weakens and makes it rapid. Cold water is the best diuretic, warm water the best diaphoretic or sweating agent.

Acute Infectious Diseases.—The method of using cold water externally in the treatment of acute diseases has been detailed in the previous pages, but the good effects of that treatment will often be lost unless enough cold water is given internally. At least a glassful of cold water should be drunk every two hours by a patient suffering with fever. The drinking of so much water insures a good flow of urine and increases the perspiration.

Gastric Catarrh.—A pint to a pint and a half of water, taken a half-hour to an hour before meals so hot that it cannot be drunk but only sipped, will cleanse the stomach and prove an excellent stimulant to the muscular walls of that organ. This method of treatment has been very widely employed, but has often failed because the water was not drunk at a sufficiently high temperature. The administration of water to babies has already been mentioned.

MEDICAL SCHOOLS

PART VI.

ECLECTIC MEDICINE.

Name and Principle.—The name eclectic means choosing, and it refers directly to the means used for treating disease. It implies a selection of methods and remedies from all other systems of practice. "The great principle upon which eclecticism is based is: *that disease, wherever met, and in whatever form manifested, is an impairment of vitality; that causes of disease are depressing and, whilst they exist, lower vital powers.* The corollary from this is, *that all agencies employed in the treatment of disease should act in one of two ways—removing the depressing cause, and increasing the vital powers for better resistance and subsequent restoration of structures and function.*"

Belief.—The eclectic schools of medicine believe in the curative power of nature. They claim that medicines can be useful only as they aid nature in her endeavors to cure the diseased condition.

All the remedies known as antiphlogistic are discarded: bleeding, mercurials, antimony, and so forth. They avoid the use of mineral poisons for medical purposes. They seek to remove the cause of disease through the natural outlets of the body, and foster those measures which result in a better renewal of life. They treat the cause rather than any special symptoms which result from its presence.

CONDITIONS OF HEALTH.

1st. A general bodily expression of vigor, the face being the chief indicator.

2d. No painful or unpleasant sensations should be present.

3d. The bodily heat should be 98.4 degrees Fahrenheit.

4th. A pulse of 72 beats each minute, regular in force and time.

5th. A good appetite and digestion, with a daily bowel movement.

6th. The skin and kidneys should be acting normally.

7th. Well-balanced nervous system and a clear eye.

CONDITIONS OF DISEASE.

Any deviation from the condition just described would constitute disease, but we do not usually speak of a condition as disease until it has been in existence long enough, or become strong enough, to make its presence inconvenient or troublesome to the patient. The following are some of the conditions which indicate disease:

1st. The face of the patient, his position and actions show signs of suffering.

2d. The temperature may vary widely from the normal. It may fall to 95 degrees or lower, or rise to 107 degrees or more. The presence or absence of fever can be discovered to some degree by the hand, but far better with a thermometer.

3d. The pulse may be increased or decreased in frequency; may become harder or softer than normal; may be irregular in rhythm or force.

4th. The stomach and bowels may be disturbed, and this will be indicated by the condition of the tongue.

5th. The urine and discharges from the bowels may be very much altered. The skin will be rough and harsh to the touch, and during fever hot and dry.

6th. The nervous system may present a great variety of symptoms. The eye will be dull and heavy except in special diseased conditions.

ECLECTIC DIAGNOSIS.

A consideration of the symptoms present in a given case leads to a conclusion regarding its character. That is called making a diagnosis.

Diseases are known by their features in the same way that we know our friends and relatives by their features.

ECLECTIC TREATMENT.

The medicines and methods used in caring for a sick patient are termed the treatment. These will be indicated in connection with each condition as it is described later. One thing only need be said here: *"Never give medicine unless you are positive that it will relieve present discomfort and shorten the duration of disease."*

FEBRILE DISEASES.

Fevers are of two classes: 1st. Those which have a local cause in one or more of the organs of the body; 2d. Those in which no such local cause is found, but in which the fluids of the body are involved in disease.

Phenomena of Fevers.—The advent and course of a fever is, in general, as follows: 1st. A period of gradual approach called the *incubation* *period* or *onset*. It is known by the feeling of weariness, dry skin, cold hands and feet, loss of appetite, with headache and disturbed sleep.

The Cold Stage.—2d. This is usually known by the chill which occurs. Severe headache and backache. The hands and feet become icy cold, the lips are blue and the face very pale. This stage may last only a few minutes or may be prolonged to several hours.

The Hot Stage.—3d. At this time the pulse becomes rapid. The color returns to the face and is increased. The body heat rises, sometimes very high. The skin remains hot and dry. The length of this period varies greatly in different fevers. Following it we have

The Stage of Decline.—4th. This leads to recovery. The various symptoms become less and less severe. The skin becomes moist. The secretions begin again and gradually all the functions resume their normal course.

Fevers are divided into two classes according to their course: intermittent and continued.

INTERMITTENT FEVERS.

Treatment.—This class of fevers is the result of poisoning by malaria. In the stage of onset they may be aborted by a brisk purge, an emetic and a sweat. In the cold stage the patient should be treated by a hot mustard foot-bath and then placed in bed, well covered by blankets, with hot bottles or bricks to the feet and limbs, and given frequent drinks of *ice* water or very hot coffee or water. During the hot stage cold drinks should be administered; the body frequently sponged with cold water, and then lightly covered and protected from draughts.

Between attacks the patient should remain in bed if he is at all prostrated. He should be given quinine in large enough doses to cause the ears to ring. It is best given in solution. The following prescription is a good one:

R.—Quinine	2 drachms
Water	1 ounce

Give half a teaspoonful in a glass of water every three hours. A double dose should be given about two hours before the time of next expected chill.

When the stomach will not retain quinine it may be used in an ointment:

R.—Quinine	1 drachm
Lard	2 ounces

This should be rubbed into the skin, especially the parts under the arms and on the inside of the thighs. The amount above indicated should be used every day if the patient is an adult. It will be sufficient for four days in a child five years or under.

When Quinine Fails.—When quinine fails, or is too slow in its action, the following may be used:

R.—Strychnine	2 grains
Dilute muriatic acid	2 ounces

Water enough to make half a pint. Give one teaspoonful every three hours to an adult. Another remedy is common salt:

R.—Salt	3 ounces
Powdered alum	3 drachms
Boiling water	½ pint

Give a teaspoonful every two hours during the absence of the fever.

CONTINUED FEVERS.

Febricula or Little Fever.—This may be caused by a single cold, by constipation (especially in children), catarrh, simple sore throat, indigestion and slight congestion of the lungs.

Treatment.—Relieve the bowels, if necessary, by an enema. Place the patient in a full warm bath, rub briskly after it, and follow with a hot mustard foot-bath. Place him in bed between blankets and give frequent cold drinks until he sweats. Allow him to sweat for half an hour, then rub dry and remove all but the lightest blanket. Allow him to go to sleep and he will probably wake up entirely recovered.

TYPHOID OR ENTERIC FEVER.

There are three conditions of this fever which have received separate names: 1st. Those which are so mild that they are not usually considered to be typhoid at all, and known as synochal fever; 2d. Those that are somewhat more severe, but run a shorter course than most cases of typhoid, and are called synochoid fever. They are, however, all caused by the same poison and should be classed with (3d) *Typhoid Fever.*

Typical Typhoid.—A typical case of typhoid fever has a stage or period of onset covering about one week. The usual symptoms of that stage will be present, but the gradual daily increase of fever will be quite apparent. The face will acquire a dull, spiritless aspect and the patient may be somewhat drowsy. About the eighth day a few fine, so-called, rose spots will appear upon the abdomen. Their distinguishing feature is that they do not disappear entirely when the skin upon which they rest is stretched. This fever is self-limiting, so that the treatment is nearly all comprised within the field of good nursing.

Diet.—Certain rules, however, must be adhered to very strictly. No solid food should be given at any time during the illness. Liquid food should be given every two or three hours, according to the needs of each case. At times it is necessary to awake the patient during the night to give nourishment. Milk, beef tea, albumin or white of egg, the entire egg raw, and beef extracts will be found useful.

The Bath.—Plenty of water should be given if the patient desires it. A soap and water sponge bath should be given daily. As often as the temperature goes above 102 degrees Fahrenheit an ice-water sponge bath, with friction, should be given. If these do not prove sufficient to keep the temperature under control full tub baths should be used. The water should be 85 degrees Fahrenheit when the patient is placed in it. Ice is then added gradually until the water is only 65 degrees Fahrenheit. Rubbing should be employed during the entire bath, which should continue for 15 or 20 minutes, or until the patient's teeth are beginning to chatter. He should be lifted out and quickly dried, then laid on the bed with a blanket over him until reaction follows. The blanket is then replaced by a sheet and the patient allowed to sleep if he desires. Usually a stimulant is given before each tub bath. This may be half an ounce of whiskey or brandy.

Disinfection.—All urine and bowel discharges should be disinfected before being thrown out. Probably the best thing to use for this purpose is a saturated solution of *Chlorinated Lime* or Bleaching Powder. Use a tablespoonful to each pint of the discharges, mix it well and allow the mixture to stand for five minutes before emptying.

The giving of medicine in this fever ought to be under a doctor's care, and there are so many possible complications that may arise that it is always wise to have a physician in charge of the case.

TYPHUS FEVER.

Symptoms.—This is sometimes called camp fever. It is a well-recognized form of disease, running a definite course, and is due to a special infective poison. Its onset is shorter and more severe than that of typhoid. There is severe pain in the head and back, the former is often retracted in the same way that it is in meningitis. The skin becomes a dusky red and about the sixth day a distinct papular eruption appears.

MEASLES OR RUBEOLA.

This disease is marked at the outset by redness of the eyes and free flow of mucus from the nose. There is usually some sore throat and slight cough, but the throat trouble is not as severe as in scarlet fever.

Treatment.—1. When the above signs appear begin the treatment by bathing the feet in hot water for half an hour; then place the patient in bed and give frequent doses of an infusion or tea made of lobelia and asclepias leaves, equal parts of each. This should be stopped as soon as there is produced any tendency to vomit. Such treatment favors the outbreak of the eruption. After it is fully out continue the same medicine but in smaller doses to relieve cough and quiet any lung symptoms which may be present. Plenty of water should be given and a liquid diet.

2. When the fever is high sponging with tepid water is very soothing and will often quiet a restless patient and produce sleep.

3. For troublesome cough an infusion or tea made from the ordinary red clover hay will be found very useful.

Accessory Treatment.—1. When the chest symptoms are bad a tent may be made over the bed and steam passed under it from a kettle, the water in which has a teaspoonful of the tincture of lobelia to each pint. A cloth spread with carbolized vaseline may be placed on the chest to aid in soothing the symptoms in that region.

2. Care should be taken to protect the patient from danger of taking fresh cold during at least two weeks after all the fever is gone. If care is not exercised in this regard chronic nasal catarrh may result. See that the clothing is sufficiently warm and that the feet are kept dry.

Treatment in Severe Cases.—1. Whenever a case of measles is apparently severe at the outset, the treatment should begin with the following:

Tincture of belladonna	20 drops
Tincture of aconite	15 drops
Water	4 ounces

Mix and give a teaspoonful every hour until the skin is relaxed and the pulse less strong.

2. Whenever the eruption is delayed a wet pack will usually bring it out. If this cannot be given an emetic of salt or mustard water will be found effective.

3. For very severe cough following or even during the attack a teaspoonful of the tincture of drosera in a wineglassful of water every four hours will afford great relief.

SCARLET FEVER OR SCARLATINA.

Treatment.—1. The sooner the eruption appears the shorter the disease; treatment therefore should first be directed toward that end. We accordingly begin at once with the following:

Tincture of aconite	15 drops
Tincture of belladonna	20 drops
Water	4 ounces

Mix and give a teaspoonful every hour.

2. Bathe the body frequently in water in which a little soda has been dissolved. These measures will hasten the appearance of the eruption and can be gradually decreased as the fever subsides.

3. For the throat conditions the fumes from vinegar and water (one part of the former to three of the latter) will be found useful. Also a flannel soaked in equal parts of vinegar and water should be bound around the throat and renewed every hour or half hour during the worst part of the attack and then gradually discontinued as the trouble subsides.

4. In the early stages of very severe cases veratrum may be substituted for aconite in the prescription given above. If the nervous system is much affected replace the belladonna by gelsemium. When the glands of the neck swell badly the following preparation may be painted on the outside every four hours:

Tincture of lobelia	2 ounces
Tincture of aconite	½ ounce
Tincture of arnica	½ ounce

Or, make a poultice of wheat-bran and a strong tea of lobelia and apply it to the neck. One of the best gargles for patients old enough to use this method is made by adding one-half a teaspoonful of permanganate of potassium to a pint of water.

CHICKEN-POX OR VARICELLA.

Treatment.—1. Give a sponge bath followed by a hot foot-bath and hot drinks until sweating follows. If the bowels are costive it would be well to give a dose of castor oil or a seidlitz powder at the very outset.

2. If the fever is high give the following:

Tincture of veratrum	10 drops
Tincture of asclepias	½ ounce
Water	3 ounces

Mix and give a teaspoonful every hour to a child five or six years old.

3. For itching of the skin bathe with the following:

Glycerine	5 ounces
Rose water	5 ounces
Subnitrate of bismuth	30 grains

DIPHTHERIA.

Treatment.—1. First give an emetic if the attack is severe; if not, use the prescription with aconite given under the head of Measles and add veratrum if the fever is high. In the latter condition also we should use the general bath in addition to the hot foot-bath. The bath may be made more effective by adding salt or pepper or mustard to the water. If the feet become cold at any time a hot mustard foot-bath may be used.

2. For the sore throat give every hour a teaspoonful of the following:

Potassium chlorate	3 drachms
Water	4 ounces

If the mouth and throat remain dry use the following:

Dilute muriatic acid	½ ounce
Simple syrup	2 ounces

Mix and give a teaspoonful in water as a drink every two hours.

3. When the aconite has reduced the force of the disease so that the skin becomes soft and moist, stop it and give quinine, one grain every hour until the pulse is full and strong. If the patient is old enough to gargle, any of the following may be used: Chlorate of potash ten grains to the ounce of water; infusion of baptisia; infusion of witch hazel; dilute tincture of phytolacca; or the solution of permanganate of potash thirty grains

to the pint of water. The last can be used as a spray or on cotton swabs. Use vinegar and water compresses to the outside of the neck constantly.

POISONOUS BITES AND STINGS.

Treatment.—Give aromatic spirits of ammonia in two-drachm doses in water every hour until reaction follows the shock Strong coffee is also useful for the same purpose. Slices of raw onion may be bound on the point of injury or sting. Another very good external application is the permanganate of potash solution two drachms to the pint of water.

A COLD OR CORYZA.

Treatment.—Whenever a cold is suspected it may be broken up by giving a half drachm of the tincture of gelsemium and allowing the patient to sleep for a couple of hours. If this cannot be done give a hot mustard foot-bath, place the patient in bed and give hot drinks until a good sweat is secured. If more rapid means are desired give an emetic. Another good method is a wet sheet pack. Give a brisk purge in nearly all cases.

INFLUENZA.

Treatment.—Usually the plan just given for treating a cold will be found equally useful for influenza. If there is fever, or further treatment is needed, give teaspoonful doses of compound tincture of Virginia snakeroot every two hours until the patient is well.

TONSILLITIS.

Treatment.—Use the following spray to the part during five minutes every four hours:

R—Aconite tincture	1 drachm
Water	¼ pint

This will usually cut short the attack. Do not allow the patient to swallow the spray. If an atomizer cannot be had apply the medicine on cotton. Equal parts of vinegar and water may be used in place of the above. Apply on the outside flannels moistened with stillingia liniment. If the aconite spray does not cure in two days stop it and paint the tonsils with fluid extract of witch hazel.

ACUTE LARYNGITIS OR CROUP.

Treatment.—This may be the same as that just outlined for tonsillitis, but usually more active measures are needed. The hot foot-bath, steam inhalations and frequent small doses of tincture of lobelia or sanguinaria in simple syrup should be given until free sweating and flow of mucus occur. Prompt relief will then follow. Dry cups on the outside will be necessary in severe cases. A good free purge should always be secured early in the treatment.

ACUTE BRONCHITIS.

Treatment.—1. Begin the treatment by an emetic of lobelia or mustard water; after it acts give a purgative—the compound jalap powder or compound cathartic pill; follow that with a hot foot-bath and warm drinks until the patient sweats freely, then dry quickly and place in bed. If the attack is not completely averted by this treatment give the following until recovery is complete:

R.—Tincture of gelsemium	1 ounce
Acetate of potash	½ ounce
Water	up to 4 ounces

Mix and give a teaspoonful every two hours

2. If a stronger expectorant or cough mixture is needed the following may answer:

R.—Syrup of lobelia	2 ounces
Syrup of senega	2 ounces
Syrup of althea	2 ounces
Tincture of hyocyamus	½ ounce

Mix and give a teaspoonful every two hours. (It is well to give quinine and iron as a tonic during convalescence.)

CHRONIC BRONCHITIS.

Treatment.—1. This is often the result of neglect in the course of an acute attack. Its treatment is therefore the same as that used in later stages of acute bronchitis. Cough is usually the most troublesome symptom, and the following mixtures have been found useful in combating it:

R.—Balsam of fir	1 ounce
Balsam of tolu	1 ounce
Balsam of peru	1 ounce

Oil of anise	½ drachm
Tr. Cannabis Indica	1 drachm
Honey	2 ounces

Jamaica rum, to make one pint.

Mix, and take 1 or 2 teaspoonfuls every three or four hours. Shake well before using.

2. Or,

R.—Balsam of copaiba	1 ounce
Balsam of fir	½ ounce
Sweet spirits of nitre	½ ounce
Honey	½ ounce

Mucilage of acacia, to make 4 ounces

Mix, and take a teaspoonful every four hours.

Inhalations of creosote are also useful—a drachm in a pint of boiling water three times a day

ASTHMA.

Treatment.—1. Chronic cases have been cured by the following:

R.—Sulphur	½ ounce
Bruised anise seed	2½ drachms
Confection of senna	6 drachms
Syrup of tolu	6 drachms

Mix, and take freely every day, or, one or two teaspoonfuls three times a day, or sufficient to keep the bowels moving easily.

2. Or,

R.—Sulphur	½ ounce
Anise seed	½ ounce
Senna	1 ounce
Cream of tartar	1 ounce

Mix, and give a teaspoonful every night, or oftener if required.

Bathing and hygiene should be very carefully attended to.

WHOOPING-COUGH OR PERTUSSIS.

Treatment.—1. Begin with the following medicine as soon as the diagnosis is made:

R—Fluid extract of belladonna	10 drops
Alum	1 drachm
Simple syrup	4 ounces

Mix, and give a teaspoonful every three hours to a child two years old. The amount of belladonna in the prescription should be increased five drops for every added year of age in the patient.

2. Another good mixture is:

R.—Clover hay	2 ounces
Boiling water	½ pint

Mix and let stand for half an hour, then strain and add 1 ounce of sugar. Give 2 teaspoonfuls every three hours.

INTESTINAL WORMS.

Treatment.—To drive out stomach worms give five and a half grains of santonate of soda on two succeeding nights; follow on the second morning with sufficient compound jalap powder to give a free purge. Give tonics afterward and keep the bowels regular.

Pin Worms.—Keep the bowels regular and the person clean, also take daily injections of cold salt water in the strength of a tablespoonful of salt to the pint of water.

Tape Worms.—1. For tape worms give the following:

R.—Oil of turpentine	½ ounce
Castor oil	1 ounce
Honey	1 ounce
Yolks of 3 eggs.	

Beat the ingredients together and take it all, in divided doses during an hour, before retiring at night.

2. The ethereal oil of male fern is also an efficient remedy. The dose is from a half to one and a half drachms according to the age of the patient, given in milk or mucilage at night and followed in the morning by a purgative of compound jalap powder.

DYSENTERY.

Treatment.—Give the sulphate of magnesia in teaspoonful doses in as little water as will melt it every hour until the blood is stopped. Follow that by an astringent, or opium if there is pain. The subnitrate of bismuth will rapidly check the succeeding diarrhœa; give half a drachm every two hours until the bowels are checked. The patient should go without food for a day and then begin very cautiously with liquid diet and gradually increase until full diet is again reached.

MEDICAL SCHOOLS

PART VII.

JAPANESE CHARACTERISTICS AND THEIR VARIOUS DISEASES AND TREATMENTS.

THE SKIN.

The skin of the Japanese is of light yellow, which on the one hand transits into an European white, while on the other hand it goes down into deep yellow or light brown. Exceptionally, it is light bronze colored as if they came from Ceylon.

Skin of Upper Classes.—The people of the upper class are mostly lighter in color than those of the lower stratum. Some Japanese are not distinguishable from Caucasians in color, and apparently lighter than many of the Spaniards or Italians. The northern Japanese people are lighter in color than those of southern Japan, where they resemble somewhat the Malayans in color. Differences between sex is very slight. It is caused by the difference of the mode of life. Japanese men are more exposed to weather and sunshine than the women, half of whose lives are lived inside of the house.

Skin of Children.—Children are not lighter than the adults, and toward their teeth-changing age they become somewhat flushed with red color.

Babies.—A new-born baby is called *akambo* in Japanese, which means "red baby." It is remarkably red compared with that of the white race, but the redness does not continue longer than a few days after birth. Babies of higher class people are also lighter in color than the lower, while in other respects infants coming from robust mothers are frequently lightly rose-colored in the cheek, and are not as beautiful as the lighter child for European eyes.

THE CAUSE OF COLOR.

Skin Pigments.—The yellow color of the skin of Oriental people depends upon the presence of pigment particles within the skin stratum. So we find yellow or brown pigments in these people while it is black in the negro. But by careful examination of the lighter-colored skin of the Japanese there is a very small amount of pigment, though it may be larger in amount according to the intensity of the color. Of course the amount of the pigment found in Japanese differs only quantatively, not qualitatively. In children just born, or in fœtus, the distribution is very uneven and the amount is also scarce.

Mixed Breeds.—Mix breeds of European and Japanese are mostly very beautiful, their skin resembling north Europeans, or sometimes the inhabitants along Mediterranean Sea.

Japanese Ladies—(Upper Class.)

Japanese Lady—(Middle Class.)

Skin of the Abdomen. — Local pigmentation is not without interest. The pigmentation of the middle line of the abdomen is oftentimes noticed in yet young maids who have no relation to pregnancy at all, whereas European women have it only during their pregnancy. In rare cases we meet with pigmentation of male subjects.

Nipples.—Nipples of unmarried girls are darker than those of the blonde European women, which in the latter must be gently rose-color before marriage.

Lips.—Lips and eye-balls are generally about the same as Europeans are, but sometimes there are some who have circumscribed blueish-grey coloration along the conjunction of external skin and mucous membrane.

Tatooing.—Beside these congenital characteristics, Japanese did tattooing in greater extent. But tattooing on the skin is not accepted by the higher class or educated people, it is controlled exclusively by the lower layer of the people, such as coolies or the same. Under the law these barbarous customs were already forbidden and now we see them very seldom among the old coolies.

CARE OF THE SKIN AMONG JAPANESE.

Japanese Cleanliness.—Japanese are strict lovers of individual cleanliness. Every family has a bathroom, whether in the city or the village cottage, from the wealthy to the poorer classes. Those who have no bathrooms of their own may find everywhere public baths, which are scattered throughout the cities or towns. These public baths stand under inspection of the sanitary police.

Daily Baths.—Above the middle-class people, Japanese take baths every day; even the laborers never omit baths over three days at longest.

Change cf Clothing.—Underwear, stockings or other clothes are sent once a week to laundries, while well-to-do families take more frequent care of the clothing. Japanese women are more careful than the men, so if any woman omits a bath over two days she is spoken of as dirty by the others.

Bath Temperatures.—The temperature of the bath is generally very high in the city, while it is about the same as in other lands in the country.

THE HAIR.

Types of Hair.—Speaking generally, Japanese have the same features of hair as the other folks of the Malayo-Mongolian race. There are, however, at least two kinds of Japanese distinguishable by their hair, one is of the thin hair type, with long face; another is of the thick hair type, which reminds us of resemblance of the Albino race. In this latter type we observe pretty coarse hair on various parts of the body.

THE HAIR OF THE HEAD.

Color of Hair.—Development of hair of Japanese is thick and strong. The color of the hair is seemingly dark, but absolute black is very seldom seen. If we examine the hair carefully it is darkish-brown, or frequently red-brown; true blonde hair being seen rarely in the Japanese, it being somewhat abnormal, as the hair of the Albino is among Europeans.

Hair of Children.—The hair of children is far lighter in color than that of adults. Under four years the children rarely have dark hair.

Women's Hair.—The hair of women appears a more brilliant black than that of the men. The length of the hair is preserved pretty long, for æsthetic purposes, and some reaches to the heel, when they untie their pompadours. Japanese women's hair is generally straight. Curling is seldom seen. Japanese women detest curled hair, and unmarried girls are quite unhappy when they have curled hair.

THE BEARD.

The beard of the Japanese is very thin and scarce. It makes its appearance comparatively later in life than with the Europeans. The color is generally dark-brown to red-brown, and sometimes lighter brown.

CARE OF THE HAIR.

Pompadours.—No woman in the world, from admirable society ladies to the negresses in a wild part of Africa; from ancient Egyptians to the present Hottentots, have failed to take care of their precious hair. So it is also the case with Japanese women. As you read and see, the Japanese women form very peculiar pompadours with great earnestness and skill.

Perfumes.—They use some perfuming oily materials to make the hair fragrant and brilliant.

Hats.—The European hat is never used by Japanese women. They use an oblong square piece of various cloth. In a short walk they use no cover except a handy parasol. On the other hand, most of the laboring class women use cloth covers over their heads.

NOSE AND EYES.

Nose Peculiarities.—One glance is enough to judge what nationality is in question, when anybody notices the nose and eyes of the Japanese. The difference of the nose of Japanese from Caucasian lies in the anatomical difference as to the attaching point of the root of the nose to the frontal bone. Where the Caucasian's stretches out directly from the same plain in front the Japanese nose starts from far deeper portion of the frontal bone. This peculiarity gives a further characteristic appearance to the face of disagreeable flatness. Exceptions to this common character are frequently seen.

The Eyes.—Japanese eyes are very different from those of the European, as the latter have the depression between the orbital arch and lid-rim, while the former lack this depression and have folds in the lid-rim and inner-angle of the eyes. The opening also is narrower in Japanese. All these differences depend upon the position of the eye-balls. The European has eye-balls situated more forward.

Color of the Eyes.—Japanese have dark eyes; among one hundred, ninety-five being brown, five black. But in Japan true black eyes are rarer than in Southern Europe. New-born infants have bluish-black to greenish-black colored eyes, which after several months become gradually a brown color.

Eyebrows generally grow very thick and broad and of black color.

Ears.—Ears are not built shapely in many cases as we notice in Europeans.

Cheek.—The cheek is also pretty prominent, which represents an Asiatic characteristic. This is only remarkable in one type of Japanese; while in another the long-faced type is not much noticeable.

MOUTH AND TEETH.

The mouth of fine type is usually small, and the lips fasten shapely; while the lower type has a comparatively wider opening, which is disagreeable to look at. Teeth are of good quality when grown normally. In the lower class, however, there is a more prognatic mouth, owing apparently to the ignorance about the proper care of the children during their second dentition. Dental diseases seem to be rarer than in this country. Oral hygiene is regarded as important by the Japanese, and children are taught to get a regular habit of cleaning the mouth at home as well as at school.

INFECTIOUS DISEASES.

Measles (Mashin or Hashika).—Preventive measures are taken strictly. Isolation of the sick children from healthy. When one of a family falls a victim, all dejecta of the sick child is mixed with antiseptica, such as five per cent. carbolic acid, or one one-thousandth corrosive sublimate lotion, and so forth. For the disease itself, baths, packs—especially carbol ointment, milk, eggs, expectorants and sometimes antipyretics.

Scarlet Fever (Shiokownetz).—Preventive measures are the same in all infectious cases. Baths, douches, packs, gargles, lemonade, stimulants and symptomatics. In Japan no epidemic of this disease has been experienced, and I have treated only one case. Some authors believe that Japanese are immune to scarlatina.

Small-Pox (Howsow).—Before the introduction of Jenner's vaccination, small-pox was regarded as if a life-tax which everybody born in Japan must pay once in a lifetime.

Vaccination.—Since vaccination has been imported people believe in it unanimously, and thirty years ago the government put forth vaccination laws. It is compulsory every three or seven years. The treatment is by baths, symptomatics, stimulants, prophylactics.

Chicken-Pox (Futow).—Children suffer only slightly, and unless complications follow the physician is not usually called in. But medical officers of health notify the case.

Mumps (Zikasenin).—Generally mercuric ointment rubbing is enough. If the case is grave, the leech, purgatives, light diet and incision are resorted to.

Whooping-Cough (Hiakunichigai).—Isolation of children from patient. Change of air; much out-of-door life; moist packs; cold ablution. Each fit attended with vomiting should be followed immediately by the administration of nourishment (milk, egg, broth, and so forth). Bromoform from three to ten drops, sometimes beneficial. Internally, some narcotics, such as bromide or belladonna. There are many children who become true patients from imitating their comrade-patients. Parents lack care when such a comic accident occurs.

Cholera Nostra (Kakuran).—This is much dreaded by parents, and also in adults in the summer months.

Treatment.—Calomel, bismuth, soup, poultices, stimulants.

tices, stimulants.

Dysentery (Sekiri).—Japan was losing her inhabitants at a dreadful rate annually, and the cause was discovered by Dr. Shiga, who started his serum-therapy treatment about three years ago in behalf of the government. The result of this special treatment decidedly diminished the mortality. Dr. Flexner, professor in University of Pennsylvania, discovered the same cause in his expedition to the Philippines.

General Treatment.—Besides this special treatment, castor-oil, calomel, suppositories, saline infusions, muscilaginous enemata, concentrated liquid diet, stimulants, hot packs, isolation, notification, disinfection, and so forth.

Canine Rabies (Kiokenbio).—Preventive inoculation, or commonly spoken of as Pasteur's treatment. Cauterzation of wound, narcotics (chloral), stimulants.

The Plague (Pest or Kokushibio).—The recent invasion of plague gave Japan a severe blow, and government as well as people were in utmost alarm, and every effort was made to subdue this obstinate disease. At present no case in Japan. The preventive measure is very strict; burning down infected places, ships and trains quarantined, house-hunting and arrests in suspicious cases.

Special Treatment.—For special treatment, Yersin's healing and preventive inoculation; Kitasato's serum therapy; Oiher's symptomatic treatments.

Yellow Fever (Ohnetz).—No cases in Japan.

The Rheumatic Diseases (Riumatisu).—Salicylic acid and its salts, salophen, salol, colchicum. Wet packs, baths (iodine, bog-mud), massage, and so forth.

Croupous Pneumonia (Haiin).—Ice-bag, cold drinks; diet with milk and eggs; cold packs, mustard-plaster, digitalis and stimulants.

Epidemic Cerebro-Spinal Meningitis (Riu-kow-sei Now-sekizuimaku-in).—Occurs seldom in Japan.

Treatment.—Rest, cold pack, ice-bag, blood-letting from mastoid region, calomel, cantharoidal blister to the nape of the neck, mercurial inunction, antipyretica and narcotica.

Erysipelas (Tandoku).—Serum therapy in first place, and then ordinary symptomatic treatments, such as poultices, sustained nourishment, cold baths, stimulants, injection of 3 per cent. carbolic acid to surrounding inflammation.

Relapsing Fever (Kaikinetz).—Quinine or other antipyretica stimulants and tonics. This disease was introduced by soldiers at the end of China-Japanese war, but no cases at present.

Malarial Fever (Kwanketsunetz).—Quinine sulphate in various doses before the expected attack—usually six hours. In protracted cases, arsenic and iron administered, and baths directed.

TUBERCULOUS DISEASES (Kekkaku-bio).

Pulmonary Tuberculosis (Hai-kekkaku).—Digestible diet (milk chiefly recommended, eggs, solf-boiled rice, cod-liver oil, young poultry), cool rubbing of skin, open-air life, country residence, treatment in sanatorium; arsenic, creosote, guayocole, myrtol, solveol, and so forth; mineral waters.

Expectorants (pectoral tea, senega, apomorphine, chloride, and so forth). For cough—codeine, opium, belladonna, morphine. For night-sweats—atropine, agaricine, and so forth. For hemorrhages—rest, ergotine, morphine, ice-bag, lead acetate. For marasmic fever—antipyretics. Individual spittoon, disinfection of linens, encouragement of the patient.

Sanatorium Treatment.—Beside these ordinary treatments in Japan a special serum therapy is in popular favor, or new-tuberculin injection in sanatorium, where patients are provided with free air, sports in various styles and medical attendance.

Glandular Tuberculosis (Rui reki).—Cod-liver oil with lime, iron, iodide, arsenic, nutrition; sometimes surgical operation. Japanese believe that glandular tuberculosis is a forerunner of pulmonal tuberculosis, and they come to get it extirpated by surgeon.

Intestinal Tuberculosis (Cho kekkaku).—Opium, poultices, bismuth, astringents, mucilaginous drinks, decoction of salep or colombo.

Tuberculous Peritonitis (Fukumaku-kekkaku).—Beside symptomatic treatments, laparotomy undertaken with brilliant results.

Typhoid Fever (Chotyphus).—Serum therapy is used as a special remedy with good results. Diet: milk, broth, eggs, beef juice or chicken. Calomel at onset. Cold baths at 20 degrees Centigrade, and antipyretica· in febrile stage. Later, digitalis and stimulants. Prevent bed-sores by alcoholic applications or air bed.

Diphtheria and Croup (Dixteria Croopu).—Serum therapy in every case. As other methods for preventing complications, gargle or inhalation of dilute solution of carbolic acid (rarely used), iced milk, stimulants. In suffocating stakes, emetics, intubation or tracheotomy. In such grave cases combination of antitoxin serum and surgical operation are preferred.

Grippe (Riu kow sci Kanbo).—Isolation and disinfection of the patients, but in widespread epidemic these preventive measures are scarcely to be carried out. For patient, rest in bed, good ventilation, lightly digestible food and medicaments. Among medicines, quinine is very effective, or antipyrine and salicylic acid are recommended for fever. Expectorants, gargles and stimulants according to the condition of the patient.

Asiatic Cholera (Kolera).—Strict quarantine and disinfection. Cholera cadavers always cremated.

Serum therapy against cholera was and is used by government institute, but we have not many cases to determine its real value. Calomel, opium, ice-pills, hot-packs, stimulants, infusion of saline solution are symptomatic medicines.

Leprosy (Rai-bio).—Preventive measure is the most important, inasmuch as we have no special treatment. In a plain, near Mountain Fuji, there is one lepra village under government expense, where any patient who desires to spend his poor life apart from the community is allowed to live, furnished with necessary staffs.

Among medicaments for leprosy, natrium salicylicum has good reputation and ointments of ichthyol, aristol and hydroxylamin are recommended.

Gonorrhea (Rinbio).—As preventive measure, strict inspection of public girls thrice a month by sanitary inspectors. Some use condoms and wash local part with 2 per cent. carbolic acid, after intercourse.

Medicinal Treatment.—Among medicines, sulphate of zinc followed by iodoform is most used; garbolmol came in general use quite recently. Internally, balsamum copaivæ (0.6 in gelatine capsule, five to ten times a day), balsamum peruvianum, balsamum tolutanum, oleum terbenthinæ, fructus cubebæ, and so forth. Dietary care is very important, as light coffee, milk, tea, avoiding strong coffee, tea or spices. Patient must be confined to bed, no speaking, no pictures which may cause sexual excitement; against erection and pollution; early supper, many hours before sleep, and a pulver consisting of bromide potash, lupulin and camphor.

For annoying urination (repeated in short time) suppositories of opium or morphine used (but not belladonna).

For chronic gonorrhea we decline to meet urethral strictures, which want bougie treatment or surgical operation.

Tetanus (Hashofu).—Serum therapy used in general. Beside thorough incision and washing of the infected wound, if discovered. Among symptomatic remedies narcotics are the only medicines to lessen patient's trouble.

Chancre (Nansei-gekan).—When ulcers appear many abortive treatments offered, such as washing with concentrated nitrate silver, sulphate zinc, caustic potash, caustic paste or galvanic cauterization.

After these methods, application of thin layer of iodoform, aristol, calomel, bismuth, dermatol or europhine, and covered with fat-free cotton moistened with carbol vaseline. Liquors avoided as well as sexual intercourse. For complications, often surgical treatment wanted.

Syphilis (Baidoku) or Acquired Syphilis (Kowten baidoku).—Prophylaxis, being the same as gonorrhea. When syphilitic patients may marry.

It is considered as harmless if they marry after three years from their first infection. But this, of course, depends upon the patients, whether they had taken proper antisyphilitic treatment during that period or not. After marriage, they should consult physicians every two or three weeks for first six months whether any sign of return appears or not.

Syphilitic Stages.—If a man is infected with syphilis, the first symptom is hard chancre, which wants mercury treatment. From this primary stage to secondary period mercury cure is the chief treatment. The patient is forbidden to indulge in *baccho et venere* during this treatment. Cold is harmful for the patient taking inunction cure, so cold baths or douches not allowed. Dietary care is also important. Some physicians recommend combination of inunction and internal administration of iodide potash. For the broad condylomata on the external skin, washing with saline solution and calomel pulverization proves beneficial. When recidicive occurs, sometimes condylomatous eruptions appear in mouth. In such case internal use of mercuric preparation is prescribed.

Third Stage of Syphilis.—When syphilis proceeds to the third stage, iodide of potash is prescribed as a special remedy. By this treatment, if patient be persevering enough to maintain full effect, almost all of the syphilitic symptoms disappear.

Iodo preparations combined with iron serve as an effective remedy against subsequent cachexia and amyloid degeneration. Mineral baths (sulphur) are recommended also. Sometimes subcutaneous injections of mercuric preparations are directed.

If gummata affects various parts they are treated surgically.

Nose Syphilis.—When syphilis is located at nose, mercuric plaster is used for ulcerative part of skin. For the destruction of internal part of nose, we treat it with nose-douche, washing with carbolic acid (2 per cent.), corrosive sublimate or thymol, followed by snuffing of calomel or iodoform. After the destructive process ceases to progress, the deformation is repaired by a plastic operation.

Other Syphilitic Forms.—Other forms of syphilis are treated under general antisyphilitic remedies and special methods according to the location.

For syphilitic affection of nervous system, electricity or massages are recommended sometimes beside general antisyphilitic cure.

Hereditary Syphilis (Senten baidoku).—Prophylactic measures are most important, so nobody should marry within the course of three years after infected with syphilis. If a woman becomes infected with syphilis during her pregnancy, a strict antisyphilitic remedy must be taken. If it was in the course of the latter half of pregnancy, the baby is expected to be born healthy. But in such a case, the baby is to be nourished with cow-milk or by a wet-nurse exclusively. But if syphilis had rooted deep in the parent before pregnancy, the baby also inherits the formidable virus with its life, and then the baby is preferably nourished with its mother's milk. But the mother is treated with iodide potash in order that the specific medicine may be secreted through mammalian glands into the milk. For the disease itself, use mercuric pills in favorable forms for the stomach.

Treatment of Mothers.—During treatment the mother should take care of cleaning oral cavity every day Bath containing corrosive sublimate (3.0), 28 degrees Réaumur, is directed every day. In my country the bathtub is made of wood generally, and it suits for the use of mercury bath.

DISEASES OF RESPIRATORY ORGANS.

Laryngeal Catarrh (Kowtow katarrh).—Priesneitz's pack around neck, hot milk, codeine for acute. Inhalation of saline water, tannin-alum solution; painting with nitrate silver (3-10 per cent.) for chronic. Baths are not recommended much.

Bronchitis (Kikwanshi katarrh).—For acute form, mineral water, milk and tea, wet packing, warm baths, codeine, expectorants. For chronic form, marine life or warm southern climate, wet packs, rubbing skin, expectorants. Inhalation of mineral water is especially recommended.

Asthma (Zensoku).—Treatment of eventual nose diseases, marine life. In paroxymata, iodide potash, morphine, inhalation of pyridin vapor, and so forth.

Pulmonal Emphysemata (Haikishi).—About same as asthma or bronchial catarrh. Iodide potash or digitalis, gymnastics of lungs, pneumatic chamber, compression of thorax, and so forth.

Pleurisy (Kiomaku-irr).—If the quantity of exudate reaches up to second intercostal space soon, it is drawn by puncture. But there must be several pauses during the whole operation, as it will cause cerebral anemia from sudden loss of blood-pressure. Before and after treatment of the operation must be strictly aseptical. Besides, contra-irritation, wet pack, ice-bag, diuretics, anti-rheumatics and morphine.

DISEASES OF CIRCULATORY ORGANS.

Endocarditis (Shinzonaimakuin).—Rest, ice-bag, salicylic preparation or eventually digitalis, strophantus.

Cardiac Insufficiency (Shinzo-benmaku-heisafuzen).—Digitalis infusion (0.8—1.2/00) is the chief remedy in meeting the disturbance. Other auxiliary medicaments are diuretics, stimulants, morphine.

For the hydropsy from heart disease: Calomel combined with digitalis, taking care of stomatitis at the same time. Then the diuretics such as acetate potash, diuretics, scilla, tartarus boraxatus, and so forth.

Treatment by Massage.—Massage, high position and enveloping of the swollen parts is recommended. Puncture for strong hydropsy is rare. During compensated stage care is directed not to use strong body moving or alcoholic beverages, while patient should take nourishing, assimilable food. Bath-cure (cold baths) is also advisable.

Nervous Palpitation (Shinkeisei Shinki-kowshin).—First affair is to improve patient's general condition; iron, quinine or strengthening diet for anemic subjects, while bitter waters or bath-cure prescribed for the full-blooded. Among internal remedies nervines or sometimes narcotics are used. Cold compression and ice-bags often act beneficially.

Angina Pectoris (Kyoshinsho).—Irritation of skin (mustard), application of hot or cold compression, morphine injection and other narcotics such as chloralamid, nitro-glycerine, and so forth.

Pericarditis (Shinnow-in).—Quiet, rest, digitalis, strophantus, ice-bag or mustard-paste. In large exudate, puncture with aspirator; in pus accumulation, surgical operation.

Aneurism of Aorta (Daidowmyakuriu).—Iodide of potassium, ergotine, compression, electric cauterization, and so forth. But no remedy proves effective.

DISEASES OF DIGESTIVE ORGANS.

Inflammation of the Mouth (Konai-iu).—Including various forms of stomatitis. Cleanliness, care of gums; gargle with tannin, alum, borax, and so forth, according to the condition, antiseptics also used such as hypermanganate of potassium (0.1 per cent.), chloro-potash (2 per cent.), hydrogen dioxide solution (2 per cent.), tincture myrrh, tincture ratani, or lapis cauterization in grave cases.

Acute and Chronic Gastric Catarrh (Kuisei and Mansei-I-katarrh).—Treatment of the acute same as here. For chronic forms it depends upon the nature of the causal diseases. At first, treatment of causal diseases; regular dietary, avoiding fatty indigestible foods. Sometimes cold rubbing upon the stomach region, massage over stomach, regular evacuation (using oil or glycerine enema), sea-water baths, hot spring cures.

Gastric Ulcer (I-kwaiyo).—Bed-rest, warm poultice applied intermittently, fluid diet (milk, eggs, soups). Internally, administer sodium bicarbonate with bismuth, the latter used alone in large doses in some cases.

Cancer of the Stomach (I-gan).—Internally, only symptomatics, sometimes hydrochloric acid and extract of condurango used with good results. Eventually, when the cancer is located near the pylorus it is removed by surgical operation.

Dilatation of the Stomach (I-kakucho).—Regular washing of the stomach in evening daily; massages, electricity; cold rubbing over gastric region. Fluid diet, regular evacuation with purgatives or enema, morphine, chloral hydrate, and so forth. Surgically, early extirpation of the tumor.

Nervous Dyspepsia (Shinkeisei-shokafurio).—Cold rubbing, strengthening diet, massage, electricity, baths and mental therapy.

Intestinal Catarrh (Chokatarrh).—Dietary regulation, opium and tannin, tannigen, and so forth. For acute form, artificial Carlsbad salt, packs, massage, digestible food and regular evacuation. Alcoholic liquors forbidden.

PARASITES OF THE INTESTINES (CHOKISEICHIU).

1. **Tape-Worm.**—Extract filic maris 2.0 in capsules (in 5-6 pieces) taken in one-half hour. Three hours later one spoonful of castor oil given. Sometimes we use thymol, one-half grain, instead of extract filic, as the latter may eventually cause amourosis. Chloroform is also used with success.

2. **Ascarides (Round Worm).**—Santonin, one grain several times a day.

3. **Oxyuris (Seat Worm).**—Naphthalin, 4 x 0.15—0.4; castor oil or calomel.

Ascites (Fukusui).—Treatment of causal diseases, digitalis, diuretics, calomel, puncture.

Jaundice (Oudan).—Artificial Carlsbad; dietary direction; no fat stuffs.

Biliary Calculi (Tanaeki).—For paroxysm apply cataplasm, narcotics internally or hypodermically. Carlsbad-cure, salicyclic and bicarbonate sodium given later.

SOME HINTS FROM JAPANESE TREATMENT

Taking the Pulse.—The little finger can be used in taking a delicate pulse when it would be impossible to readily recognize it with the fingers ordinarily used.

Curing Convulsions.—Convulsions may be frequently cut short like magic by turning the patient on his left side.

Increasing Warmth.—When chilly from exposure breathe very deeply and rapidly, and the increase in bodily warmth will be surprising.

A Cure for Burns.—Crude petroleum poured upon a burned surface and covered loosely with cotton will subdue the pain almost at once.

Poisonous Wounds.—Strong spirits of ammonia applied to the wounds of snake bites or rabid animals is better than caustic. It neutralizes the poison.

Carbolic Acid Poisoning.—Carbolic acid poisoning can be quickly cured by giving cider vinegar diluted with equal parts of water in half tumblerful doses every five or ten minutes for a few times.

Morphine Poison.—Permanganate of potash is an efficient antidote if taken while morphine is in the stomach. Grain for grain will completely decompose it.

Infantile Colic.—A towel dipped in boiling water, wrung out rapidly, folded to proper size and applied to the abdomen, with a dry flannel over the hot towel, acts like magic in infantile colic.

Pregnancy Nausea.—Vomiting and nausea of pregnancy, a 20 per cent. solution of menthol in sweet oil; use ten drops on sugar when nausea appears.

Rheumatic Joints.—Wrap a swollen rheumatic joint in cloths wrung out of ice water and the pain will almost instantly cease.

Snake Bites.—Saltpetre is a specific for snake bites.' The dose is a teaspoonful for a child and a tablespoonful for an adult in a glass of cold water, applying it also to the bite.

Cure of Opium Habit.—The most effective treatment and cure of the opium habit consists of the administration of bromide of soda. The drug is given one drachm every two hours for the first two days and one-half drachm on the third day. Two ounces seldom fail to effect a cure. See index.

PART VIII.

GERMAN HOME MEDICAL TREATMENT.

The Kneipp Cure.—Natural healing has been developed in Germany mainly by Priessnitz, Schroth, Kneipp, Kuhne, Bilz and others, a feature common to all their cures being the extended application of water. Especially the Kneipp cure has found in recent years a great many friends.

Principles of the Kneipp Cure.—The principal remedy is cold water. Regarding its judicious application the following general rules may be given:

1. The shorter the bath or the application of water, the better the result.

2. The colder the water, the shorter must be the bath and the quicker results the wholesome reaction in the body. Weak persons ought to begin, however, with mild temperatures, say, first 60 degrees (Fahrenheit), later 55 to 50 degrees and finally cold water.

3. Before the application of the cold water is made the body should be as warm as possible; otherwise one must begin with a warm water treatment.

4. When the application of the water has been made, do not dry the body, but dress yourself quickly and make first quick movements and then slower ones, in order to produce the reaction in the body. Should the reaction not set in and the patient be very weak, he should go to bed to get warm.

5. Hardening the body is the best means against all diseases. Nothing is better for this purpose than cold water.

Kneipp Knee Shower-bath.—With a hose sprinkle cold water on the leg of the patient, from the foot to the knee. Begin with the front of the leg; start with the right foot; go up to the knee and then back to the right foot; go then over to the left foot, up to left knee and back; do this until the legs become red. Then turn the patient and treat in the same way the back part of the legs.

The knee shower is applied mainly against rush of blood to the head; to make the blood circulate from the head to the lower parts of the body.

The Kneipp Head Shower-bath.—The whole head is uniformly sprinkled over with water by means of a sprinkling can; one sprinkling can full of water is sufficient. For weak persons take the can only one-half full. The head shower-bath is applied with success, especially against diseases of the eyes, ears, nose and head. Take care to dry the hair carefully after the bath.

Walk Barefoot in the Damp Grass.—Besides the regular baths of the whole body or of parts of the body, this is the most simple and natural means of hardening the body. Persons who suffer with rush of blood to the head or with diseases of eyes, ears, throat and nose, ought to walk daily barefoot in the damp grass for ten to twenty minutes with excellent success if the weather is not too cold.

Natural Healing in Special Diseases.—Special applications of the Kneipp cure in different cases will be found in the following articles on special diseases, in which also the methods of treatment of other German representatives of natural healing are considered.

CHICKEN-POX.

Treatment.—Keep the body warm, take good care of the skin by taking daily a full or three-quarter full bed steam bath (see the description below). After the bed steam bath take a bath of 86 degrees Fahrenheit, or rub the whole body with water of 72 degrees. The inflamed portions of the skin may be powdered now and then with rice-flour. Avoid stimulating food, go much into the fresh air, and if necessary use a syringe when bowels are constipated.

The Bed Steam Bath.—This bath may be taken in two forms: either as a full bath or as a three-quarter bath. In the full bath the body is wrapped up to the chin, in the three-quarter bath the arms are free. The method of wrapping up the body is the same in both cases. The wraps are a woolen blanket, and a damp linen cloth, which has been put into water between 64 and 77 degrees and has then been wrung out. The woolen blanket must be larger than the damp linen cloth. Put the woolen blanket first into the bed on the mattress, put the damp linen cloth above the blanket, put the entirely nude patient above that and then wrap him up. The patient must be covered entirely by the damp linen cloth, and this must be again wrapped up in the woolen blanket, so that at the outside there is nothing but the woolen blanket. Hot water bags may often be used to advantage in connection with this bath; four bags may be applied;

one at the bend of the knee, the second at the soles of the feet, and the other two at both sides of the legs, outside of the wrapping. Sometimes the two bags alone are sufficient.

These baths are not only good against chicken-pox, but may be applied also in other diseases, as will be noticed in the following articles.

WORMS.

Treatment.—Avoid irritating food. The best food is bruised wheat-bread, pumpernickel, fruits, figs and carrots. Place every night, or every second night, a bandage around the abdomen at 77 degrees (see the description below), and rub the whole body in the morning with water of 55 degrees. If necessary, use a small syringe twice daily to make the bowels move; use water of 77 degrees.

Kneipp's Worm Remedy.—Kneipp recommends the following remedy against worms: Mix wermuth with twenty-five ground seeds of pumpkins, and drink this tea for several weeks, and the worms, which cannot stand the bitter tea, will soon disappear.

The Bandage Around the Abdomen.—This bandage is not only useful for the above purpose, but is somewhat like a universal remedy; it acts often in an admirable manner; it renders very good service against cold in the head, headache, toothache, loss of appetite, dizziness, etc.; it is especially useful against female ailments.

How to Apply the Bandage.—There are required for this bandage some woolen cloth or a long woolen shawl or a piece of flannel of sufficient length and width to make a bandage twice around the abdomen. There are further required two towels of coarse linen, which are put into water between 66 and 75 degrees, and are then thoroughly wrung out. These towels are placed upon the flannel or woolen bandages, which are spread out ready for use. The flannel or woolen bandages must be larger than the towels, so that the flannel or wool have to show from either side the width of two or three fingers. The bandage, fixed in this way, is then placed around the abdomen of the patient.

BRIGHT'S DISEASE.

Treatment of Acute Form.—Take daily a bed steam bath (see the description in the article on chicken-pox), with extra bandages at the back in the neighborhood of the kidneys, also extra bandages on the heart, until perspiration takes place freely; after that take a bath of 88 to 90 degrees, and a shower-bath with the water of 81 to 84 degrees, and rub the skin thoroughly. If necessary, extra bandages of shorter duration may be made on the kidneys, around the legs, and so forth, also during the night. Patients who do not stand well the bed steam baths should be treated by mildly washing and rubbing the whole body several times daily. Avoid irritating food; don't drink much. The best to drink is milk which is not too cold; strictly avoid all alcoholic drinks. Take care that the bowels move regularly; if necessary use a syringe; go much into the fresh air. Improvement can be obtained by this treatment in one or two weeks, but sometimes it takes several months, until the urine becomes clearer and lighter and begins to flow in greater quantities.

Treatment of Chronic Form.—The chronic form develops itself from the acute form; often the patient is not aware of the development itself until the disease is in a critical state: Take daily a bed-steam-bath, after that a bath of 88 degrees or warmer, say 61 to 63 degrees, for eight to ten minutes. Bandages may also be applied during the night. Avoid irritating food; take much sweet milk. Drink water in moderate quantities, take care that the bowels move regularly. Above all, rest in the bed.

Kneipp's Cure.—Against Bright's disease Kneipp warmly recommends lemon juice. According to Dr. Siebert one patient ate in three months three hundred lemons, daily three or four, and the urine was free of glair. The patient was dismissed as cured. Kneipp's baths must be of course also applied in connection with the treatment.

ITCH.

Treatment.—Separate the sick person from the healthy people, because this disease is contagious. Give the patient a steam-bath of 15 to 25 minutes, and after that let him take a bath in a bathtub at 97 to 104 degrees, for ten to fifteen minutes; rub the body thoroughly with soft soap, to which may be added some sand in order to scratch the itchy spots open. After the bath, rub soft soap thoroughly in the itchy spots (without sand) and give the patient a "dry-wrapping" (see description below) for three-quarters of an hour to an hour. Finally let the patient take a cleansing bath at 88 degrees. Repeat this treatment daily for four to five days. Let the patient change the underwear every day. One may also leave out the steam-bath and begin at once with the warm bath. One may also rub the itchy spots with kerosene before retiring in the evening;

when rising in the morning let him take a bath and clean the body with soap. Repeat this treatment for three or four days.

Description of the Dry-Wrapping.—Place on the mattress a large woolen cloth and above that a large linen bed-spread, put the patient on these cloths and wrap the same around him, first the linen bed-spread and around that the woolen cloth; wrap the bed-covers (the blankets) around and tuck them in all about so that no air can come through, and the heat which is developed inside cannot escape. The patient will soon begin to perspire.

The dry-wrapping is of great value for the most chronical diseases, but may in single cases be of advantage. One should always observe whether a patient stands better a dry-wrapping or a bed-steam-bath (see the description of the latter in the above article on chicken-pox) and one should choose what is more advantageous to him.

CANCER.

Treatment.—The prospect of a thorough recovery of the patient is not very great. To produce relief, give the patient daily a warm bath of 59 to 61 degrees, and sprinkle softly the sick portions of the body; further avoid all irritating food, use a diet without any meat (among the original inhabitants of the East Indies, who are vegetarians, and live on vegetables and fruits, the disease of cancer is entirely unknown); finally let the patient go much into the fresh air and let him sleep at open windows.

The cancerous spots of the body should often be cleansed by rinsing them with clean water or with decoctions of camomile; also soothing or exciting bandages (see the descriptions below) should be applied. During the first period of the disease let the patient take weekly three or four full steam-baths following with full-wrapping baths and baths in the bath-tub with shower-baths; or, instead of that full bed-steam baths (see the description in the above article on chicken-pox) with following bath. Sometimes it is of advantage to apply daily warm compresses on the sick spots, which are afterward sprinkled softly with water of 81 to 86 degrees and are then covered with a compress, moistened with water of the same temperature.

Description of Soothing and Exciting Bandages.—Both bandages are applied only at special sick portions of the body, that is on the cancerous spots. An "exciting" bandage heats the sick portion of the body and dissolves and diverts the disease. It is applied in the following manner.

Dip a piece of linen into cold water of 64 to 73 degrees, wring it out and place it in two, four, six or more layers on the sick spot; place above it a thick dry woolen patch which must be larger on all sides than the moist linen. This compress must be tight and well fixed so that the heat formed below it cannot escape; the compress must be larger than the sick spot on all sides by several inches. This compress is left on the sick spot for two, three or four hours, or for the whole night; in general as long as the patient does not want it removed; it should not annoy the patient. After the compress has been removed sprinkle the sick spot with cold water.

The Soothing Bandage.—A "soothing" bandage is applied for relieving the pain. A piece of rough linen, folded up in four to eight layers, is dipped into water of 77 to 86 degrees, slightly wrung out, placed on the sick portion of the body and covered with a woolen patch. This compress is mostly applied for 30 to 45 minutes and in general as long as they produce agreeable feelings to the patient.

CATARRH.

Treatment.—The first point to aim at must be to remove the special causes to which the increased separation of phlegm is due. Avoid irritating food, rub the whole body daily with water of 73 to 77 degrees, or take a bath of 88 to 91 degrees, after which the body must be thoroughly rubbed until it is dry. During the night a bandage around the abdomen (see description in the above article on worms) is to be applied. Further different forms of wrappings, bandages and bed-steam-baths are often advantageous. Keep quiet and rest. When the organs of breathing are affected, keep the body uniformly warm, and breathe mild, clean air which is not too dry. Take care that the bowels move daily. As the different forms of catarrh are produced by different causes, they must be also treated in a different way, and the treatment should always be of such a kind that it suits the special patient. The above remarks give the general rules.

CHOLERA MORBUS.

Prevention of Cholera Morbus.—In case of epidemic cholera morbus in a town, everybody must take great care to keep his body in such a condition that it cannot be affected by the disease. The best means of accomplishing this are as follows:

The Blood.—Take care that your blood is good and healthy. For this purpose breathe good, clean air. Everybody who can afford it should be daily in the fresh air for some time; in the fresh air take repeatedly deep breaths. Air thoroughly the rooms where you live and sleep. If one is confined to the house and must breathe bad air, breathe through the nose and rinse afterward mouth and nose with fresh water and strengthen the lungs in the best air which is at disposal.

Diet.—Avoid irritating food, don't eat meat, don't drink alcoholic drinks, avoid spiced and sour dishes. When one does not want to avoid meat entirely (which would be the best), one should take care at least that meat does not amount to more than one-fifth of the meals, while four-fifths are vegetables, rice, noodles, barley, Indian meal, farina, legumen, and everything in the way of potatoes. A sudden and thorough change in the custom of eating and drinking may, however, have disadvantageous consequences, hence be cautious during the change. Drink good water.

The Skin.—Before all other things take good care of the skin. Rub the whole body daily with water by means of a rough linen towel, dry the body, rub it thoroughly with a dry towel until the body is dry; begin with the legs and arms and proceed then to neck, head, chest, abdomen and the back. The clothing should not be too thick but comfortable.

The Gargle.—To strengthen the pituitary membranes, gargle daily with cold water and rinse the nose, afterward take a few drinks of water.

While eating, chew well the meals; "well chewed is half digested," is of great importance in this case. Keep the house and the rooms very clean.

The Bandage.—The life should be very regular. Keep the abdomen warm. He who thinks that he needs a woolen bandage around the abdomen should wear it not below but above the linen or cotton shirt.

The Bowels.—Take care that the bowels move regularly every day. In cases of diarrhœa, as well as of consumption, take a clyster with a syringe containing about one-fourth pine (*i. e.,* one gill) of water at 59 to 66 degrees; also apply during the night a bandage around the abdomen (see the description in the above article on worms), the water used for this purpose having a temperature of 72 degrees. (While most people and even physicians think that a clyster—injection—is only good to make the bowels move, it is a fact that one may also cure diarrhœa with it.)

Who lives according to these rules may be sure that he does the very best to prevent cholera morbus and should not be afraid. To be afraid is disadvantageous.

Treatment of Cholera Morbus.—1. Cholera morbus never attacks a healthy person unexpectedly; there are always before symptoms of the developing disease. If the symptom is a light diarrhœa, sometimes with an unpleasant feeling in the abdomen, rub the whole body at once thoroughly with water of 66 to 73 degrees (one part of the body after the other, while the body is warm), place a bandage around the abdomen (see the description in the above article on Worms), and put a hot-water bag at the feet; keep the bandage on for about an hour; but if it should become hot quicker, replace it repeatedly. As soon as the feet get warm, wash them with cool water and repeat this four or five times during this hour. When the bandage has been taken from the abdomen, rub again the body with water and apply a small injection with the syringe, the water having a temperature of 68 degrees. These injections should be given especially after the bowels have moved. If this treatment does not help apply a steam-bath in a suitable form, following with cooling bath, shower-bath or rubbing of the whole body. After that massage of the body and exercises or a good walk.

2. When the symptom of the developing disease consists in constipation apply injections with the syringe, about half a pint or one-fourth pint, with water of 73 to 90 degrees; repeat the same every hour or every second hour if the bowels do not move; and if this is not successful give the patient a "sitz-bath" (see the description below) at 68 to 86 degrees for five to ten minutes, while the body is kept warm and a hot-water bag is placed at the feet. Don't apply this bath when the patient feels cold, nor when he has a disease of the heart or the lungs, nor when he is nervous. Avoid any irritating meals.

Description of the Sitz-Bath.—The sitz-bath may be taken in the bath-tub or any large vessel. The water may reach up to the navel. This sitz-bath is not only good in the case of cholera morbus, but may also be applied against indigestion, rush of blood to the head, diseases of the abdomen, hemorrhoids and female diseases. These baths are often very important and their success becomes often apparent after a short time only. According to the disease and to the condition of the patient, the temperature of the water may be 66 to 73 or 82 or even more; it should be taken for five to fifteen minutes and in special rare cases for twenty-five to thirty minutes. Kneading, rubbing and massage of the abdomen during the sitz-bath are often advantageous.

GONORRHEA.

Treatment.—Keep quiet and avoid irritating meals, eat dishes seasoned very mild only, avoid all alcoholic drinks, avoid meat, drink much fresh water and enjoy the fresh air; avoid all opportunities which would cause an excitation of the genitals.

Take daily a half-steam-bath or a half-bed-steam-bath (this is a bed-steam-bath as described in the article on chicken-pox, but reaching up to the navel only, three hot-water bags, wrapped up in damp cloths, being placed at the feet), put a special damp compress, moistened with water of 73 degrees, on the genitals. Take afterward a bath of 88 degrees.

Take daily two or three sitz-baths in water of 77 degrees for fifteen to twenty minutes. During the night place a bandage around the abdomen (see the description in the article on Worms). In case of constipation make injections with the syringe. Instead of the sitz-baths, three or four partial baths of the genitals in water of 82 to 86 degrees may be taken, each for ten to twenty minutes; perhaps also repeated washing of the genitals with water of 77 degrees. Drink much water in order to dilute the urine. If one wants to inject water of 82 degrees into the urethra, this must be done very softly by means of a small syringe with rounded (not sharp) mouth; such injections may be made several times daily, especially after having made water. In the meanwhile also soothing or exciting bandages (see the description in the article on Cancer) may be made on the genitals, with water of 73 to 77 degrees, the compress being all wrapped up in a woolen cloth. To prevent inflammation of the scrotum, or when it has become inflamed, protect it by a suspensory, which is to be buckled on in a careful and suitable manner.

AGUE.

Treatment.—For cases of ague or fever-shivering, rub the patient thoroughly (dry or wet) and then give him a dry-wrapping or a bed-steam-bath (see the descriptions in the articles on Itch and on Chicken-pox). When he perspires, let him take later a bath of 86 to 89 degrees. Should this treatment cause prickly-heat on the body, looking like measles or small-pox, and so forth, this should be regarded as a good sign, because in this way the morbid matter is removed from the body. To remove it thoroughly the patient should take some more bed-steam-baths, or exciting bandages, as described in the article on Cancer, should be applied, in order to make him perspire moderately. A bath has to follow.

BOILS.

Treatment.—In all cases which have been caused by bad blood a "restorative cure" should be used (see the description below). Further put soothing or exciting bandages (as described in the article on Cancer) on the sick portions of the body, the wet linen being folded up in six to twelve layers and moistened with water of 72 to 100 degrees, according to the nature of the boil. This compress must be well covered with a woolen patch much larger than the boil; when the compress begins to get dry it is to be renewed. These compresses cool, dissolve the boil and suck out the morbid matter. It is further important to clean each boil thoroughly by washing and dipping out with lukewarm water.

The Restorative Cure.—This cure is not only good in the treatment of boils but should be applied generally in all chronical diseases, as the body needs to be first strengthened in general. This cure will always give good results whatever the special disease may be. A natural, not irritating diet is required: bread, vegetables, milk, anything made of milk and of eggs, oatmeal, fruits, now and then a soft-boiled egg is allowed. Meat should not be eaten in too large quantities; strong coffee, all alcoholic drinks, tobacco, spiced dishes, and so forth, are entirely forbidden. Drink mainly water, drink it often, especially before taking a walk, and before retiring at night a drink of water is to be recommended; lemonade, cocoa, malt-coffee are also allowed. The diet should be moderate; when the patient begins to feel better he should not stuff at once his stomach. The patient should enjoy the fresh air as much as possible and should take good care of the skin by daily washing or rubbing once or twice the whole body with water of 82 to 95 degrees; the applications described in the article on the Kneipp Cure are also to be recommended.

CONSUMPTION.

Treatment.—The principal object to aim at is the production of a healthier and purer blood; this requires a simple, digestible, nourishing and not irritating diet and plenty of pure and fresh air. The patient should sleep at open windows and exercise the lungs by uniform and slow breathing in and out in good fresh air. The patient should not work as a tailor, seamstress or in an office, in general not in such a profession or trade where he must sit continually. As long as the disease is still in the beginning period, light work in the garden, done cautiously, renders excellent service. In cases in which the disease has already made more progress the patient should begin with washing the upper part of the body with water of 86 degrees. When he has accustomed himself to these washings he should begin to wash also the lower part of the body; for this purpose he should use water of 73 to 77 degrees. Two points are to be kept in mind: first the patient must be comfortably warm while he is washed, and should afterward take care to dress himself quick and get warm by means of motions; second, while the patient is washed he should sit still, the washing and later the drying should be done by an attendant. Who has no attendant at his disposition should not do these washings at all. When the patient feels cool and uncomfortable, or when the weather is cool and rainy the washings should not be performed. As long as the patient is strong enough he should take walks in pure and sunny air as much as possible.

COLD.

Treatment.—Any disease which might arise from a cold is best prevented by a cure producing a strong perspiration so that the interrupted activity of the pores of the skin is restored. Take a bed-steam-bath (as described in the article on Chicken-pox); a rubbing of the whole body or a bath follows. See also the remarks in the articles on the Kneipp Cure and on Ague.

DIPHTHERIA.

Treatment.—The patient is to be separated from the healthy people. The windows of the room where he rests should be open. He should be covered with one or two woolen blankets which must be aired several times daily, if possible, in the sun. The floor of the room is to be cleaned daily. The following special treatment is very successful: A full bed-steam-bath (as described in the article on Chicken-pox), combined with a cool bandage around the neck, which is applied as follows: Put a towel into water of 54 to 56 degrees, wring it out moderately and place it around the neck of the patient so that it reaches up to the ears. The upper half of the bandage is now covered with a woolen cloth. The duration of the bed-steam-bath is 45 minutes to an hour. Should the patient become uneasy the wrapping is to be removed earlier. If necessary this packing is to be repeated twice or three times during twenty-four hours. Afterward the body is to be washed with water of 73 to 86 degrees. Further, the mouth is to be cleaned repeatedly by gargling; one-fifth of a lemon per glass of water. Only when the patient wants to eat give him buttermilk, apple-marmalade, fruits, oatmeal, and so forth.

DYSPEPSIA.

Treatment.—The patient should take only small quantities of easily digestible food. After any meal his body and mind should rest. Anything that is eaten should be well chewed. The best food is rice, fruits, stale rolls, and now and then a drink of water; begin first with very small quantities of water, so that the stomach can warm it, and drink gradually more and more water. Rub daily the whole body with water or take a bath, also rub repeatedly the abdomen; the sitz-bath (described in the article on Cholera Morbus) is a very good remedy in all cases of indigestion and dyspepsia.

CROUP.

Treatment.—As soon as the suspicious cough makes its appearance the patient gets a full wrapping or three-quarter wrapping (as described in the article on Chicken-pox); the linen cloth in which he is wrapped must contain much moisture; the temperature of the water used is 82 degrees; a hot-water bag, which is covered with a wet cloth, is placed at the feet; the duration of the wrapping is one and one-half hours. After that a bath of 91 degrees, while at the same time the neck is poured over with water of 59 to 73 degrees. This treatment is repeated after five or six hours. Should the condition of the patient become worse the treatment is to be repeated at once. Besides this bandages around the abdomen every two hours with a water temperature of 82 degrees, the bandages around the calves with water of 73 degrees, also every half hour soothing bandages around the neck with water of 73 degrees (as described in the article on Cancer) are to be recommended. Enjoy the fresh air by opening the windows, drink fresh water, avoid irritating food, and in case of constipation use the syringe to make the bowels move.

FELON.

Treatment.—Take often a "hand steam-bath" by holding the hand for some time over a pot filled with boiling water, the hand and pot being wrapped up in such a way that the steam cannot escape. After that bathe the hand in lukewarm water. During the night exciting bandages around the hand (as described in the article on Cancer), with separate compresses on the sick fingers, are to be applied. Every other day, and later every third or fourth day, let the patient take a bed steam-bath (as described in the article on Chicken-pox), also with separate compresses on the sick fingers. The sick fingers should be thoroughly kept clean and care should be taken to protect them from cold.

SYPHILIS.

Treatment.—Before all other things the food for the patient should not be spicy, nor should he eat meat; further he should enjoy the fresh air as much as possible and should sleep at open windows. The patient should daily take a steam-bath of about fifteen to twenty minutes, after that he should be wrapped up, and should later take a bath of 88 degrees. Instead of that daily, a full steam-bath or a three-quarter steam-bath (as described in the article on Chicken-pox), with following bath of 86 to 88 degrees can be applied. Bad cases have been cured by this treatment, combined with a strict diet, as mentioned above. Further, let the patient take, if possible, daily, two or three sitz-baths at 73 degrees (as described in the article on Cholera Morbus), each bath for fifteen to twenty minutes. When the genitals are inflamed, separate compresses are to be applied. In case the scrotum is inflamed, a suspensory is necessary. Points which discharge matter must be covered with wet linen, and above that a woolen patch is placed. The moist compresses are to be renewed, when necessary, day and night. The sick portions of the body get a bath twice or three times a day and must be carefully washed and kept clean; cleanliness is of the utmost importance. To strengthen the body, the rules of the restorative cure should be applied, as described in the article on Boils.

GOUT.

Treatment.—Avoid any irritating food, the best is that the patient accustoms himself gradually to a vegetarian diet. He ought to drink plenty of fresh water; also the juice of lemons dissolved in water. He should enjoy the fresh air as much as possible and sleep at open windows. He should take care that the bowels move regularly every day; otherwise he should use the syringe. When a painful attack of gout occurs, soothing bandages which contain much moisture (as described in the article on

Cancer) are placed around the aggrieved bones; when the bandages have been removed, wash the skin lightly with bare hands, afterward massage, first in a soft manner and gradually in a more and more effective way, then again soothing bandages. When the pain is great, the bandages should be made rather moist, so that they may be left on the skin for a longer time in order not to trouble the patient too much. During the free pauses, the patient should be brought daily to perspiration by means of a bed steam-bath of one and one-half to two hours (as described in the article on Chicken-pox), afterward a bath in water of 88 degrees, or instead of the bath, the whole body is rubbed off with water of 73 degrees. During and after the bath massage of the painful portions of the body is to be recommended. Sun-baths have also been applied to good advantage against gout.

Description of a Sun-Bath.—This bath has a very good influence in many diseases; when the patient is nervous, it should, however, be applied only with much caution. One form of a sun-bath is as follows: On a warm summer day the patient is laid upon a mattress upon which the sun shines, but at a place where there is no breeze or air, he is covered with a light cloth only and his head is protected by a parasol. He will soon begin to perspire; he lies first on the back and then on the stomach. After he has perspired, he is sprinkled with lukewarm water on the hind part of the head, the shoulders, the breast, the back and the legs; or the whole body is rubbed off with water. For some patients it may be of advantage to use cold instead of lukewarm water.

JAUNDICE.

Treatment.—Avoid any irritating food; the best is that the patient should live for some time on a strictly vegetarian diet, vegetables, fruits, bread; no meat, fat or eggs. Much fresh air, the windows of the sleeping-room being kept open; daily two to four bandages around the abdomen, with water of 73 to 83 degrees (as described in the article on Worms), each bandage for about two or three hours. Further, the whole body should be rubbed off once or twice daily with water of 73 degrees, or instead of that a bath in water of 91 degrees. One may also apply for some time bed steam-baths (about three per week) with following bath of 91 degrees or rubbing off of the body with water of 73 degrees. In more serious cases the rules of the restorative cure (see the article on Boils) should be considered. In case that gall-stones are present the patient must drink plenty of water. Further, when there are symptoms of inflammations, compresses should be placed near the liver, the temperature of the water being 78 to 82 degrees. These compresses are to be replaced or removed according to the wishes of the patient.

MUMPS.

Treatment.—When the swelling of the glands is due to bad blood the principle of the cure must be to help nature in bettering the blood. Just the glands are used by nature for purifying the blood and removing morbid matter. Therefore, the activity of the glands should be supported by steam-baths, baths in the tub, wrapping, washing, and so forth; further the circulation of the blood should be regulated by suitable massage; finally the quality of the blood should be bettered by good and healthy, but not irritating food, and by fresh air at day and night.

For acute mumps the following rules of cure may be given: Daily a bed steam-bath (as described in the article on Chicken-pox), with separate compresses around the neck, for one hour or for an hour and a half, and besides extra compresses around the neck with water of 68 to 73 degrees, well covered with woolen cloth. When they become hot so that the patient feels uncomfortable (about every thirty or forty-five minutes), they are to be replaced. Afterward the whole body is rubbed off with water of 73 degrees. A vegetarian diet is to be recommended.

RHEUMATISM.

Treatment of Acute Rheumatism.—Daily a bed steam-bath (as described in the article on Chicken-pox) for one hour or an hour and a half. Before this bed steam-bath massage first of the sound, then of the sick portions of the body with warm hands, moistened with fresh water. After the bed steam-bath the whole body is rubbed off with water of 66 degrees, with massage of the sick portions. The latter also receive often soothing bandages (as described in the article on Cancer); when they are removed cold rubbing and massage of the sick portions with bare hands. Take care that the bowels move regularly. Apply during the night a bandage around the abdomen (as described in the article on Worms). In case the inflammation and the pain are very great it is better not to use massage in the first time.

Avoid irritating food, strictly vegetarian diet is to be most recommended. Avoid all exciting drinks, such as coffee and alcoholic drinks. Breathe the fresh air in the house and outside; sleep at open windows. Drink often water and lemonade in large quantities.

SCARLET FEVER.

Treatment.—Separate the patient from the healthy people. Take care that the formation of the scurf on the skin goes on regularly so that the body is supported by the treatment in removing the morbid matter. Bandages around the middle part of the body and around the legs with water of 73 degrees (as described in the article on Cancer). When the patient has a high fever, wrap up the body (as described in the article on Chicken-pox) and put a moist towel around the neck (as in the case of diphtheria); also a bath of 86 to 91 degrees. To support the body in removing the morbid matter, apply bed steam-baths with following lukewarm baths (as described in the article on Chicken-pox). Avoid irritating food, eat much fruit, drink much fresh water, take great care not to catch cold, especially during the time the scabs fall off; but fresh air is to be brought continually to the room by opening the window. In case of constipation, apply the syringe to make the bowels move. Be careful for some time after the patient has recovered in order to prevent a relapse.

SMALL-POX.

Treatment.—Separate the patient from the healthy people. Take care to have fresh air in the room where the patient lies. Greatest cleanliness, frequent change of the underwear, daily washing of the whole body. Avoid any irritating food. Drink often fresh water, also lemonades of fruit juices. Further three-quarter or full packing (as described in the article on Chicken-pox), the water used for this purpose has a temperature of 68 to 86 degrees. Further an extra compress around the middle part of the body. This packing is made up as follows: On a mattress is placed a large woolen cloth, above that a large linen cloth which had been put into water of 68 to 86 degrees, and had been well wrung out. These two cloths are for the three-quarter or full packing. On the large linen cloth, where the middle part of the body will lie, place a large towel which has been moistened in the same water and is used as extra compress.

Put above this the patient. Wrap the towel around the middle part of his body, then the large moist linen cloth around his body, and wrap him finally up in the large woolen cloth. The duration of this packing is one hour or an hour and a half or even more, in general as long as it is comfortable to the patient. Afterward a mild washing of the whole body or a bath of 86 to 91 degrees with a following shower-bath. After this the patient is dried and brought to bed, or he is not dried, but, wet as he is, he is covered by a dry linen cloth, brought to bed and well covered with the blankets. As soon as the fever has again increased, this treatment is to be repeated. To prevent as much as possible the formation of scabs in the face, put continually compresses of 66 to 73 degrees on head and face.

WHOOPING-COUGH.

Treatment.—Separate the patient from the healthy people, as the whooping-cough is contagious. Daily one to two lukewarm (82 to 93 degrees) three-quarter bed steam-baths (as described in the article on Chicken-pox), with an exciting bandage around the shoulders (as described in the article on Cancer), of a duration of one and a quarter to one and a half hours; afterward a bath of 88 to 91 degrees is given or the whole body is rubbed off with water of 73 degrees. During the night a bandage around the abdomen (as described in the article on Worms) is applied; the water used for this purpose has a temperature of 82 degrees; the bandage must be very well covered with a woolen cloth. It is also to be recommended to take a small drink of moderately cold water after every attack of cough. Fresh air day and night; the windows of the sleeping-room should be open. Vegetarian diet, in which all irritating food is avoided. Let the patient eat fruits and slimy food, such as water gruel, barley-water, and so forth; further, let him drink lemonades of fruit juices. Meat should be avoided. Change of air, or the removal of the sick child from the town where there is an epidemic of whooping-cough, is also to be recommended.

MEDICAL SCHOOLS

PART IX.

ELECTRICITY IN MEDICINE.

Application.—At first electricity was thought to be useful for only that class of diseases due to the nerves and it was generally applied by means of the galvanic battery, which was made in various forms for home use. But the treatment has grown to embrace a variety of diseases.

Dyspepsia.—Electricity is found to be an excellent treatment for dyspepsia on account of the relief it affords to both the physical and mental conditions that accompany the disease. It gives tone to the appetite, cures sleeplessness, removes distress after eating, strengthening the powers of digestion and drives away despondency and gloom.

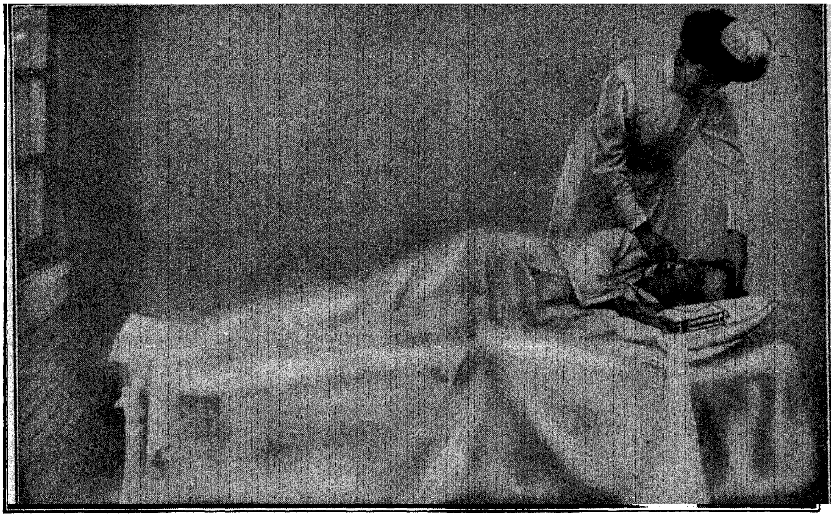
Fits, Epilepsy, Falling Sickness.—These diseases being nervous in character yield satisfactorily to the electric treatment. Any nervous disease is more readily reached by electricity than by other remedies and some remarkable cures have been placed to its credit.

Anemia.—This means want of blood and the patient becomes pale and weak. The disease is a general condition, and as a cure electricity is found efficacious. It stimulates the same as oxygen, produces more red corpuscles in the blood, imparts increased vital energy to the blood currents and does away with languidness and depression.

Consumption.—When this disease is traceable to catarrhal inflammations, faulty secretions and impaired nutrition, electricity is found beneficial as a purifier of the blood, a quickener of circulation and a preventive of the tuberculous deposits in the lungs. It is even claimed that by its stimulating effects on nutritive functions it builds up that part of the system which has gone to decay.

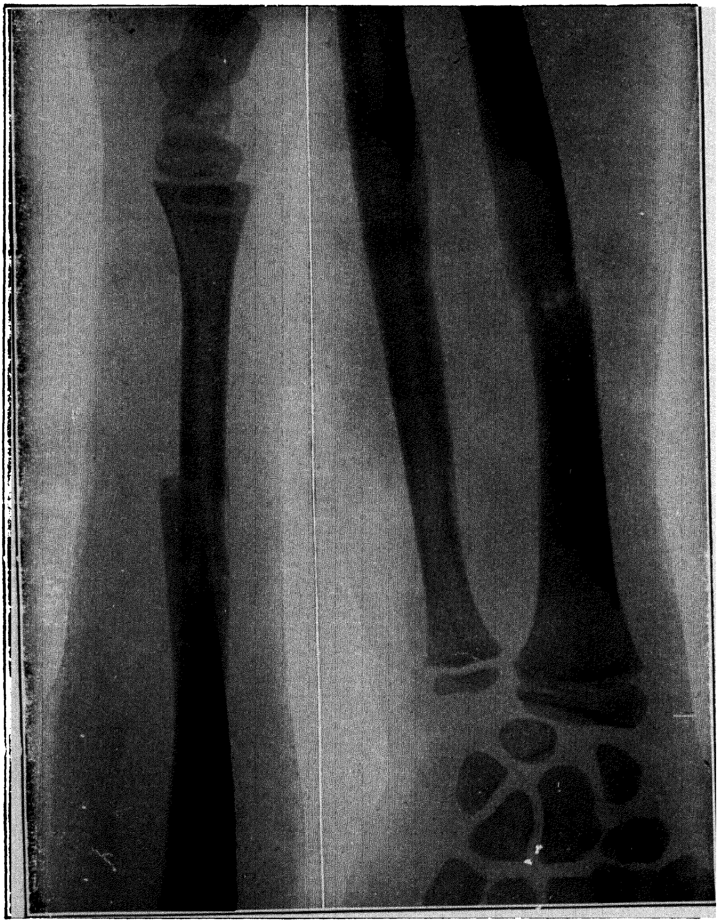
Catarrh.—Those skilled in electric-healing claim that electricity is almost a specific for the cure of this disease and they have placed many cures to its credit. The grip and hay-fever, being catarrhal in their nature, are also treated effectively by electricity.

Nervous Debility.—This is produced by a constant drain upon the nervous forces and fluids of the system. Its symptoms are loss of memory, dimness of sight, constipation, gloominess, impoverished blood, and



Application of Electric Massage to the Face

Treatment of Abdomen with the Electric Battery



X-Ray plate showing fracture of the forearm.

so forth. The modern electro-therapeutic treatment is applied with great success in this distressing disease and many permanent cures are claimed.

Neuralgia.—This painful nervous disease yields to but few treatments, but it is claimed that the electric treatment can be relied on in all cases, acute or chronic, to give almost instant relief and effect a cure.

Sciatica.—This is only another form of neuralgia and is also amenable to treatment by electricity.

Rheumatism.—In modern electro-therapeutics it is found that rheumatism yields readily to the electric treatment, the claim being that the disease is due to a storing of waste material in the body which can only be removed through the circulation, a process which electricity effects when skilfully applied.

Diabetes.—In this terrible and baffling disease the electrical treatment has been found efficacious, not only arresting the disease but producing cures. The claim is that it stimulates the system and so fortifies nature that the disease is finally overcome.

Kidney Diseases.—In diseases of the urinary tract producing weakness of the organs, extreme nervousness, milky or cloudy urine, pain in the back, frequent, scanty or painful urination, the electric treatment is found to have a powerful tonic effect on the organs, enabling them to reassert their functions and in the end eradicate disease.

Paralysis or Palsy.—This disease, due to an overworked or debilitated nervous system, is amenable to the electric treatment, and it has been found that such treatment is about the most effective that can be used.

Conclusions.—It will be seen that while many of the diseases curable by electricity are outside of the strictly nervous class, yet all are more or less associated with that class, so that after all, the merits of the electric treatment may be said to rest largely on its stimulus to and power over the nervous system.

THE X-RAY

An astounding electrical revelation came during the last years of the nineteenth century through the discovery of the X, or unknown, or Roentgen, rays. In 1894 Hertz showed that the cathode rays of the Geissler tubes would penetrate thin sheets of metal placed within the tubes. Subsequently Paul Lenard showed that the cathodic ray could be investigated as well outside of the tube as within it, and secured some photographic effects. Professor Roentgen took up the subject, and, in 1896, fairly set the scientific world aflame with the announcement that **the cathodic, or X, ray would not only penetrate solid substances, but** deposit solid substances within or behind those other substances. He invented a photographic instrument to take advantage of his discovery, and by means of it, electricity was turned to the account of photography, pictures being possible of the interior of the human body, and of any foreign substance therein.

The discovery and application of the X-ray has proved of immense value to medicine and surgery. By its means the physician is enabled to carry on far-reaching diagnoses, and to ascertain with certainty the whole internal structure of the human body. Fractures, dislocations, deformities and diseases of the bones may be located, and their character and treatment decided upon. In dentistry the teeth may be photographed by means of the X-ray, even before they come to the surface, and broken fangs and hidden fillings may be located. Foreign objects in the body, as bullets, needles, calculi in the bladder, etc., may be located, and the surgery for their safe removal greatly simplified. The beating of the heart, movement of the ribs in respiration, and outline of the liver and other organs may be exhibited to the eye. It has even been suggested that the X-ray may become an agency for destroying the bacilli which produces disease in the human body. Verily the X-ray opens the field for the grandest of electrical possibilities.

MEDICAL SCHOOLS

PART X.

MENTAL HEALING

No medical work is complete that deals only with drugs. Many theories of healing deal with the mind alone. The mind, which tells us of all our sufferings, is the path along which relief and recovery often travel.

Mesmerism.—This is a peculiar nervous condition in which the body and mind of an individual are supposed to be influenced by a mysterious force emanating from another person.

Hypnotism.—This is a condition artificially produced in which the person is apparently asleep and yet acts in obedience to the will of the operator as regards both motion and sensation.

Mind Cure.—This is the cure of disease by means of the mind alone.

Christian Science.—This teaches that those who really follow Jesus should follow Him in healing, which can be done through the mind.

Telepathy.—This is a power of mental vision or of mental hearing, or of a mental production of other sensations, by which the individual becomes aware of events happening in another part of the world from where he is, or can tell of the existence of objects which could not affect at any time any of his bodily senses.

HISTORY OF MENTAL HEALING.

It is natural that the apparent power of influencing the bodies and minds of others should attract much attention and be eagerly sought after for purposes of gain, or from love of the wonderful and supernatural, or for the cure of diseases. So, while many have studied mental healing in a scientific spirit, more have done so as quacks and charlatans for the mere purpose of making money.

Modern Study of Mental Healing.—Recently, however, physicians and other scientists have set about investigating the subject and giving it much study and attention. The result has been that animal magnetism, as this power is sometimes called, has been put on a level with other sciences and has helped in relieving the sufferings of humanity.

Ancient Mental Healing.—In all ages there have been certain persons who could cure disease by a touch of the hand and who could communicate a healing virtue to the sufferer. Among the Chaldeans, the Babylonians, the Persians, the Hindus, the Egyptians, the Greeks and the Romans many of the priests effected cures or threw people into deep sleeps in the shades of the temples. During these sleeps the sleeper sometimes had prophetic dreams. Ofttimes they could produce effects like those now referred to animal magnetism.

Supernatural Influence.—Such influences were held to be supernatural, and they added greatly to the power of the priests. In the middle of the seventeenth century there appeared in England several persons who said they had the power of curing diseases by a stroke of the hand.

King's Evil Cure.—Valentine Greatrakes, in the County of Waterford, Ireland, attracted great attention by his power of curing the king's evil or scrofula. Thousands of sufferers crowded to him from all parts of the kingdom. About the middle of the eighteenth century John Joseph Gassner, a Roman Catholic priest in Swabia, claimed that the majority of diseases arose from demoniacal possession, and could only be cured by exorcism. He believed his power to be altogether supernatural and connected with religion.

MESMERISM.

The Name.—Mesmerism was named in honor of one of its early investigators. Friedrich Anton Mesmer was born at Weil, on the Rhine, on May 23, 1733. He studied medicine at Vienna, took his degree and commenced to practice.

Mesmer's Belief.—He was always very much interested in astrology, and he believed that the stars exerted an influence on beings living on the earth. At first he thought this supposed force was the same as electricity. Afterward he believed it to be identical with magnetism. From this he deduced the theory that stroking diseased bodies with magnets might bring about a cure. He published his first book in 1766. Ten years later, while in Switzerland, with Gassner, he observed that the priest effected cures by manipulation alone, without the use of magnets.

Cure by Touch.—This led Mesmer to discard the magnets and to try to cure without them. He found he could relieve suffering by the mere touch of his fingers. He therefore supposed that some kind of occult force resided in himself by which he could influence others. He held that this force permeated the universe and more especially effected the nervous systems of men.

Marvelous Cures.—In 1778 he moved to Paris, and in a short time the whole city was thrown into a state of great excitement by the marvelous effects of mesmerism. Mesmer made many converts.

Paris Inflamed.—Many controversies arose, however. The whole medical faculty of Paris rose in indignation and stigmatized him as a charlatan. But still the people crowded to him. He was offered 20,000 francs by the French Government for the disclosure of his secret, but he deliberately refused the offer. He received private rewards of large sums of money.

Mesmer's Office.—Everything about his office was enveloped in mystery. His consulting apartments were dimly lighted and hung with mirrors. All was quiet and still, save for the soft strains of music that occasionally were heard. All sorts of odors were wafted through the room.

Mesmeric Methods.—The patients sat around a kind of vat, in which various chemical ingredients were concocted or simmered over a fire. Holding each other's hands, or joined by cords, the patients sat in expectancy. Then Mesmer, clothed in the dress of a magician, glided amongst them, affecting one by a touch, another by a look, while he made passes with his hand at a third. The effects of this differed greatly, but all were benefited. Nervous ladies became hysterical or fainted. Some men were seized with convulsions and palpitation of the heart.

Franklin's Investigation.—The French Government appointed a commission of physicians and members of the Academy of Sciences to investigate these phenomena. Benjamin Franklin, the great American philosopher, diplomat and scientist, was a member of this commission. Franklin and his fellow commissioners drew up an elaborate report. They admitted many of the facts, but they contested Mesmer's theory that there was an agent called animal magnetism. They believed the effects were due to physiological causes.

Mesmer's Fate.—While Mesmer himself was honest in his belief, he had many imitators who brought the science into disrepute. They were a lot of impostors who fooled the people for the sake of gain. Even Mesmer himself was denounced as an impostor and a fraud. He finally had to leave Paris, and died at Meersburg in Switzerland, on the 5th of March, 1815.

The New School of Mesmerism.—Mesmer left many disciples who investigated the subject in a scientific spirit. Chief among these was the Marquis de Puysegur. This nobleman revolutionized the art of mesmerism. He showed that many of the phenomena might be produced by gentle manipulation, causing sleep, and without the mysterious surroundings that Mesmer, himself, employed.

Spread of Mesmerism.—Since that time mesmerism has been studied by many. Each year more and more is known of it and greater use made of this knowledge. The power of mesmerism is no longer confined to France and Switzerland, nor is it exercised only by Mesmer's followers. There is scarcely a town in this country that does not contain at least one inhabitant who can heal by the stroke of the hand. Few, indeed, are those who have not seen or heard of one possessing this peculiar power.

The Mesmeric Power.—All who exercise this influence do not have power in the same degree. Some, of course, are noted for their magnetism and travel from city to city curing hundreds by their touch. Many, however, are not known outside their native village, where their gentle stroking is eagerly sought for by those suffering from terrific headaches, which nothing else can relieve. Not a few possess this power in a small measure without recognizing it as mesmerism. Many a throbbing, fevered brow has been soothed by a gentle mother's hand. How often has the touch of magnetic fingers done more than all the medicines the doctor has ordered.

Mesmerism in the Household.—Those who find that they possess this soothing property of animal magnetism, in ever so slight a degree, should endeavor to cultivate and increase that power by proper exercise. When one discovers that a light touch of the hand will cause an electric thrill which seems to drive away pain and suffering, that person must try again and again and find what strokings will bring about the best results.

Electricity in the System.—Some are born with more electricity in their system than is possessed by the average mortal. This can be seen by combing one's hair in the dark, when bright sparks will fly. Often rubbing the ends of the fingers together will bring a spark large enough to light a gas burner. If this electricity or magnetism is developed in the proper channels it will make its possessor one of the most sought after of mortals.

Mesmerism in Disease.—There are many diseases that medicines cannot cure. Some to whom medicines give no relief can be cured by the current from the electric battery. But many sufferers are turned away with the terrible verdict that nothing can be done for them. In not a few of these cases animal magnetism or mesmerism has effected a cure.

Mesmeric Cure of Headache.—In those cases of sick headache where drugs have only increased the agony, a few light touches of a magnetic hand have caused the pain to disappear, and sweet, refreshing sleep to take its place.

HYPNOTISM.

Name and Principle.—In the year 1841, a surgeon in Manchester, England, James Braid, began the study of what he called the pretensions of animal magnetism or mesmerism. He started without believing in it at all, calling himself "a complete skeptic" regarding all its phenomena. While investigating this subject he discovered that by a fixed and abstracted attention of the mind and sight on one object he could artificially produce a peculiar condition of the nervous system. To this condition he gave the name of neuro-hypnotism or nerve sleep; from the Greek νεῦρον nerve and ὕπνος sleep. Later the part neuro was dropped and the term hypnotism came into general use.

Hypnotism Explained.—At a meeting of the British Association in Manchester, on June 29, 1842, he read an essay on the cure of disease by hypnotism. In the following year his book came out, in which he reported a great number of cases in which he had successfully applied hypnotism in the relief and cure of disease.

Hypnotism a Science.—Since Braid started his investigation scientists in every country have studied the subject until now hypnotism is considered one of the national sciences.

Generally Taught.—In every college of the land hypnotism is taught and in every large city that art is practiced. It is not astonishing that this subject has caused such study among the scientists and has excited such wonder among all who have witnessed its workings.

Phenomena.—To think that by holding up a bright object or by waving a hand one person can put another so completely in his power that the victim not only acts but even thinks as the operator desires. If the operator tells his patient to walk across the room the patient shrieks in terror at what he believes is a wild beast.

HOW HYPNOTISM IS PRODUCED.

Manner of Hypnotizing.—The usual method of inducing the hypnotic state is to cause the person operated on to stare fixedly at a bright object, such as a glittering piece of glass, or a polished watch charm, or the shining steel of a penknife. This object is held at from eight to fifteen inches from the eyes in such a position above the forehead as will strain the eyes and eyelids.

Effect on Eyes.—The operator may stand in front of, to one side of or behind the patient. As the patient strains to see an object so near it will be noticed that the pupils, the little round dots in the middle of everyone's eyes, are at first very small. You can see this whenever a person tries to look at a near object.

Enlargement of Pupils.—In a short time, however, the pupils will begin to grow larger. It is then that the operator makes a few passes over the face without touching it. The eyelids then close. Or the operator may gently close them with the tips of the fingers, at the same time very gently stroking the cheeks. Often a twitching of the eyelids may be observed when they are closed. The eyes may afterward become widely opened.

The Hypnotic State.—The patient is now in a sleep-like condition. The limbs often remain in almost any position in which the operator may place them. At the same time the patient may now be caused to make movements in obedience to the commands of the operator. He must also act according to the ideas suggested to him.

Hypnotic Illusions.—Thus, he may eat a raw potato with relish, apparently under the impression that it is an apple. He may make wry faces on drinking a glass of water when told that what he is taking is castor oil. He may ride on a chair or stool as in a horse race. He may fight with imaginary enemies or show tolerance of affection to imaginary friends. In short, all kinds of actions, even of a ridiculous and degrading character, may be done by the patient at the command of the operator.

Effects on Muscles.—Another class of phenomena consists in the production of stiffness or rigidity of certain muscles or groups of muscles, or even of the whole body. For example, on stroking the forearm it may be rigid while bent or stretched out. The knee may be strongly bent with the muscles stiff, hard and immovable. The muscles of the trunk may become as rigid as to allow the body to rest like a log with the head and heels on two chairs. In this position it is so stiff and rigid that it can bear the weight of the operator sitting upon it. The patient may be made to hear sounds that don't exist and to see colors and feel various sensations which exist only in the patient's mind.

Waking Up.—The patient may remain in this condition for an hour or more. He may then be roused by holding him for a few minutes and blowing gently into the eyes; sprinkling water, making upward passes or simply saying "wake up" are other methods employed for awakening.

After the State.—Usually the patient has a vague recollection, like that of a disturbed dream. Sometimes, however, the patient distinctly remembers all that has happened and even feels ashamed at having been compelled to do ridiculous actions.

Who May Be Hypnotized.—Certain persons are more readily hypnotized than others. It has also been observed that, once the condition has been successfully brought about, it can be more easily induced a second time, a third time more easily than a second, and so on. Finally the patient may be so under the will of the operator that a fixed look, or a wave of the hand, may throw him at once into the condition. M. Liégeois has hypnotized some of his subjects by telephone. Children under three or four, on the other hand, and insane persons, especially idiots, are unusually hard to hypnotize.

THE SYMPTOMS OF THE TRANCE.

Loss of Memory.—In the earlier stages of hypnotism the patient remembers what has happened, but with successive sittings he sinks into a deeper condition, which is commonly followed by complete loss of memory. On waking he can recall nothing at all.

Return of Memory.—But just as we may be reminded of a dream by meeting persons or objects that figured therein, so on being prompted the hypnotic subject will often remember what happened in his trance. One can often make them remember by merely telling them during the trance that they shall remember.

Suggestibility.—The patient believes everything his hypnotizer tells him and does everything the latter commands. The patient may do things over which the will has normally no control. He will redden, turn pale, sneeze, become hot or cold, and so forth.

Effects on Motion.—Tell the patient that he cannot open his eyes or mouth, cannot unclasp his hands or lower his raised arm, and he will be immediately powerless to do so. Say his arm is paralyzed and it will fall limp at his side.

Hallucinations and Delusions.—You can make your subject think he is freezing or burning, itching or covered with dirt, or wet. He can be made to drink a cup of vinegar for a glass of champagne and may become drunk in consequence. A chair will be a lion, a broomstick a beautiful woman. The subject can be made to believe that his personality is changed into that of a baby, of a street boy or of Napoleon. He may even be transformed into a beast or an inanimate thing like a chair or a carpet.

Sensation Abolished.—Legs and breasts may be amputated, children born, teeth extracted and the most dangerous operations undergone without the patient feeling any pain. In the same way neuralgias, toothaches and headaches may be cured. In one case the sensation of hunger was abolished and the patient took no nourishment for fourteen days. A subject may be made blind to a certain person, and to everything pertaining to him. What he says is not heard and his contact is not felt.

Acuteness of the Senses.—The sense of touch is so delicate that a subject after simply poising on her finger tips a blank card drawn from a pack of similar ones can pick it out from the pack by its weight. A coin from the operator's pocket has been repeatedly picked out by the subject from a heap of twenty others by its greater weight. A subject may be made to hear a watch tick or his operator speak in a distant room.

Changes in the Tissues.—In certain subjects a congestion, a burn, a blister, a pimple or a bleeding from the nose or skin may be caused by a mere suggestion.

After-Hypnotic Suggestions.—These are given to the patient during the trance to take effect after waking. They succeed with a certain number of patients, even though the act is to be performed months or even a year after the command is given. In this way one can make the patient feel a pain or be paralyzed, or be hungry or thirsty, or do something ridiculous after coming out of his trance. In these cases he forgets that the suggestion was given him in a previous trance. He thinks he is acting of his own free will.

MIND-CURE.

The Mind and Disease.—It is well known that the mind has a great influence on matter. Physical changes have been wrought by mental states. Diseases have been caused and have been cured by the influence of the mind. Many instances can be quoted illustrating this fact. Persons have been shot dead with blank cartridges. An Edinburgh criminal died from a supposed loss of blood when it was only warm water that was made to trickle over his arm after it was badly pricked by the surgeons.

A Case in Point.—Dr. Moore mentions the case of a lady who died with every symptom of hydrophobia under the mistaken notion that she had been bitten by a rabid dog when it was demonstrable that the animal had only torn her dress.

Another Illustration.—One of the most instructive and satisfactory experiments on record showing the influence of the mind in the generation of fatal diseases is that tried upon four Russian criminals who had been condemned to death for political offenses. The cholera was raging at the time in Russia, and the criminals, while ignorant of the fact, were made to occupy beds on which patients had recently died with the disease. Although thus exposed to the contagion not one of them exhibit the least symptom of the malady.

The Second Experiment.—After this they were told that they must sleep on beds that had been occupied by persons who had been sick with the cholera. But in fact the beds were entirely new and had never been used by anyone. Their fear proved to be a more powerful influence than the contagion, for three out of the four took the disease in its most fatal form and died in four hours after the attack.

Effect of Faith.—The influence of faith in the cure of disease is well illustrated by a fact mentioned in Paris's Life of Sir Humphrey Davy. In the early period of his scientific career, Davy was assisting Dr. Beddoes in his experiments on the inhalation of nitrous oxide. Dr. Beddoes, thinking the oxide must be a specific for paralysis, a patient was selected for trial and placed under the care of Sir Humphrey. Before administering the gas, wishing to ascertain the temperature of the palsied man's blood, a small thermometer was inserted under his tongue. The paralytic, wholly ignorant of the process to which he was to be subjected, but deeply impressed by Dr. Beddoes with the certainty of its success, no sooner felt the thermometer between his teeth than he concluded that the talismanic influence was at work, and in a burst of enthusiasm declared he felt its healing power through his whole body.

Carrying on the Experiment.—Here was an opportunity to test the influence of the mind in the cure of palsy that was not to be lost. The gas was not used, but on the following day the thermometer was again employed with equally marked effects, and at the end of two weeks the patient was discharged cured, no remedy of any kind having ever been used except the thermometer. His faith made him whole, not by accident, nor by a miracle, but by an invariable law of our being.

The Power of Faith.—Faith is a spiritual force that has accomplished wonders. It is an actual psychological or spiritual force. To believe that we can do a thing, especially if that faith is the result of an understanding of nature's laws, empowers us to do it. To believe that we are well, or that we are becoming so, excites a spiritual force within us, that goes far toward making us so.

Faith in Remedies.—If we firmly believe that a certain remedy will cure us of a diseased condition, though it has no chemical adaptation to the removal of the disorder, we shall be benefited by it. Disease has often been cured by faith alone in the patients.

The Bible Instance.—The familiar case of the woman mentioned in the Gospel history, who had suffered for twelve years from a dangerous uterine hemorrhage, baffling the skill of various physicians, is known to all.

Requisites in Mind-Cure.—There are two things in a patient necessary to the mind-cure. One is a desire to get well. The other is a faith in the efficiency of the remedial agency.

How Mind-Cure Acts.—Through the grand system of sympathetic nerves each organ in the body is connected with every other, and the whole with the mind. There is no part or function which cannot be affected just as certainly, though perhaps not so sensibly, by the will-force, as the muscles of the arm.

The Nerve Conductor.—The pneumo-gastric nerve, according to Evans, which is distributed to all the organs within the cavity of the trunk, is the appointed conductor through which the mental force is communicated to them and influences their action. We have only to concentrate the mind's force upon any of the internal organs, as the stomach, liver or intestinal canal, and through the pneumo-gastric nerve its workings will be influenced.

Mind-Cure in Indigestion.—If the stomach has become exhausted of its nerve force so that it fails to do its work and the food in it is a motionless and fermenting mass, according to Evans, it can be made to obey the command of the sovereign mind. Concentrating the mind upon it, bringing our spiritual force to a focus, we may calmly and powerfully will it to proceed to business and attend to its proper work, and it will obey us as readily and as promptly as a good servant yields to the order of his employer. The same effect may be produced upon the action of the intestinal canal.

Mind-Cure for Cold Extremities.—Mental-curists claim that if the blood and vital heat do not circulate through the extremities, which feel a deadly coldness, it is because the spiritual life does not permeate the tissues. We may send the spiritual principle there, by the will force, to distribute to the negative parts their share of the vital flame.

Every Man His Own Physician.—A little practice, according to Evan, will render the mind-cure easy and natural, and we can become our own physician and healer without the use of actual medicine.

TELEPATHY.

Mind-Sight.—We know that the somnambulist or sleep walker, in the darkness of the night, with his eyes closed, can climb dizzy heights and walk along dangerous precipices with ease and apparent safety. This power thus exhibited, according to Prof. Barnes, is evidence that there is a medium adapted to the sight of the mind which enables it to see things beyond the sense of ordinary sight. Many instances have occurred where persons in a natural state have discovered that they possess the power to divine the thoughts of others.

Division of Telepathy.—Telepathy or clairvoyance may be considered under two heads, namely, sympathetic and independent.

Sympathetic Telepathy.—A sympathetic clairvoyant takes on the feelings of the one with whom he is in sympathy. He very often feels, sees, hears, tastes and smells that which the other party does.

Telepathy in Disease.—He is sometimes able to locate pain and disease immediately through this wonderful faculty. Barnes gives the following examples of sympathetic telepathy: "I blindfolded a gentleman, placed my hands in contact with his, while the third party pricked me at various points with a sharp instrument. The subject would feel the pain immediately at the point upon his own body corresponding to the exact location where the instrument was being used upon me. . .

"I know a dentist in Western New York who is so sympathetic that he suffers whenever his wife does. He has the same feelings and never improves until she begins to recover. A pupil of mine, a contractor, who is exceptionally strong, told me that the above condition existed between himself and wife, and that the distance made no difference, as he was hundreds and sometimes thousands of miles away from home."

Independent Telepathy.—Independent clairvoyants are able to get information independently of any sympathetic relation, apparently. They are able to separate the soul from the body, as it were, and to travel to foreign countries. Time and distance seem to cut no figure with them. Prof. Barnes recites many startling instances of this kind of telepathy.

Practical Application of Telepathy.—The usefulness of telepathy lies in the knowledge of its practical application. Understood and applied, it is a most valuable and valued instrument in the hands of the learned physician or in any of the walks of life.

CHRISTIAN SCIENCE.

Mortal and Divine Mind.—In Christian Science a great distinction is drawn between mortal mind and the Divine mind. Mortal mind is part of our material being, it belongs to matter, and it gives us our feelings of pain, sickness, error and sin. The Divine mind is spiritual. It is part of that Divine Spirit that fills the universe. It is God. Inasmuch as the Divine mind is God and fills the universe, it is good and truth. There can be no sin or sickness in divinity.

Nature of Sickness.—Sickness is merely a false impression conveyed by erring mortal mind. The way to cure both sin and sickness is by substituting the Divine mind for mortal mind. This can be accomplished by a proper realization of the Scriptures in their true meaning, according to Christian Science, until the seeker after truth separates the material from the spiritual, and thereafter is ruled by the Divine mind.

Principles of Christian Science.—The fundamental propositions of Christian Science as laid down by Mrs. Eddy in book "Science and Health," are summarized in the four following, to me, self-evident propositions. Even if read backward, these propositions will be found to agree in statement and proof:

1. God is all.
2. God is good. Good is mind.
3. God, Spirit, being all, nothing is matter.
4. Life, God, omnipotent good, deny death, evil, sin, disease.

Disease, sin, evil, death, deny good, omnipotent God, life.

The evidence of the physical senses often reverses the real science of being and so creates a reign of discord, assigning seeming power to sin, sickness and death; but the great facts of life, rightly understood, defeat this trend of errors, contradict their false witnesses and reveal the Kingdom of Heaven, the actual reign of harmony on earth. The material senses' reversal of the science of soul was practically exposed by the demonstrations of Jesus nineteen hundred years ago, yet this so-called sense still makes mortal mind tributary to mortal body, and ordains certain sections of matter, such as brain and nerves, as the seats of pain and pleasure, whence matter reports to this mind its status of happiness or misery.

Revelation of Christian Science.—The revelation of Christian Science consists of two parts:

1. The rediscovery of the Divine science of mind-healing, through a spiritual sense of the Scriptures and through the teachings of the Comforter, as promised by the Master.

2. The proof, by present demonstration, that the so-called miracles of Jesus did not specially belong to a dispensation now ended, but that they illustrate an ever-operative Divine principle.

Prayer and Healing.—"The prayer of faith shall save the sick," says the Scripture. What is this healing prayer? A mere request that God will heal the sick has no power to gain more of the Divine presence than is always at hand. The only beneficial effect of such prayer for the sick is on the human mind, making it all more powerful on the body through a blind faith in God.

Right Prayer.—In order to pray aright we must enter into the closet and shut the door. We must close the lips and silence the material senses. In the quiet sanctuary of earnest longings we must deny sin and plead God's allness. We must resolve to take up the cross and go forth with honest hearts to work and watch for wisdom, truth and love. We must "pray without ceasing." Such prayer is answered, inasmuch as we put our desires into practice. The Master's injunction is that we pray in secret and let our lives attest our sincerity.

Method of Treatment.—Mrs. Eddy advises the following mode of treatment:

"Always begin your treatment by allaying the fear of patients. Silently reassure the patient as to his exemption from disease and danger. Watch the result of this simple rule of Christian Science and you will find that it alleviates the symptoms of every disease. If you succeed in wholly removing the fear your patient is healed."

Winning the Battle.—The great fact that God wisely governs all, never punishing aught but sin, is your standpoint, whence to advance and destroy the human fear of sickness. Plead the cause for science and in truth, mentally and silently. You may vary the argument to meet the peculiar or general symptoms of the case you treat; but be thoroughly persuaded in your own mind and you will finally be the winner.

MEDICAL SCHOOLS

PART XI.

HUMAN SCIENCE

PHRENOLOGY, PHYSIOGNOMY AND PALMISTRY.

"If any science, art or work has for its beginning, its object and its end the improvement of humanity and the advancement of the race, then that work, art or science deserves the encouragement and recognition that is its due."—*Cheira.* There is more in this science than may at first sight appear.

Phrenology.—We know that certain bumps upon the head indicate certain characteristics of human nature.

Physiognomy.—The color of the hair and eyes, the form of the mouth, of the chin and nose, the shape of the ears, afford certain and infallible indications of temperament.

Palmistry.—The shape of the hand and fingers relates to the hereditary influence of character and disposition; the lines and markings of the palm to the event of past, present and future.

OBJECT OF HUMAN SCIENCE.

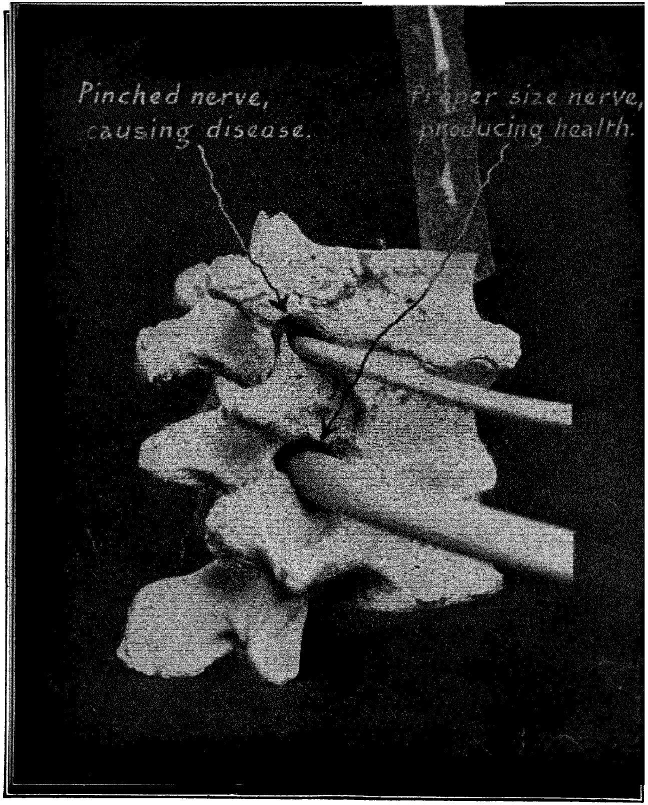
"Know thyself" was the grand motto of the ancients.

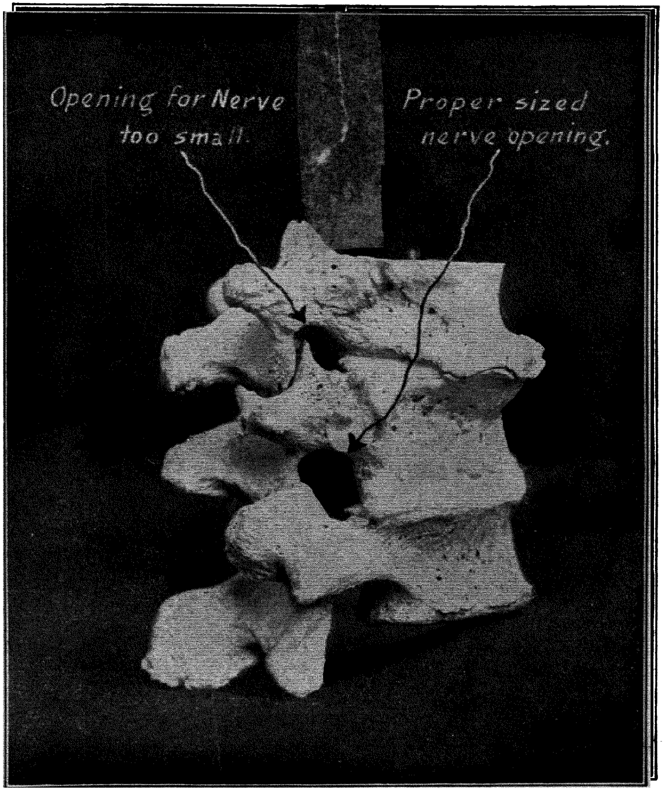
It is still the watchword of a modern and progressive world.

By the knowledge of self we may master self, and by the improvement of self we may also improve mankind.

Mentality.—Mentality is the ultimate aim and goal of men and of all things on earth. Mental science, therefore, constitutes the embodied summary of all science.

Uses of the Science.—It is the purpose of this article to give the latest results of the researches of scientists in the subjects of phrenology, physiognomy and palmistry. Only by the study of these great subjects


Pinched nerve,
causing disease.
Proper size nerve,
producing health.


Opening for Nerve
too small.
Proper sized
nerve opening.

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of will. They are sincere and true in promise, staunch in friendship, strong in principle and honest in business.

The Spatulate Hand.—The spatulate hand is so-called not only because the tip of each finger resembles the spatula that chemists use in mortars, but also because the palm, instead of having the squareness of the preceding type, is unusually broad either at the wrist or at the base of the fingers. When the greater breadth of formation is at the wrist the palm of the hand becomes pointed toward the fingers. When, on the contrary, the greatest breadth is found at the base of the fingers the shape of the hand slopes back toward the wrist.

Significance.—When hard and firm the spatulate hand indicates a nature restless and excitable but full of energy of purpose and enthusiasm. When soft and flabby it denotes the restless but irritable spirit. Such a person works in fits and starts but cannot stick to anything long. The peculiar attribute that the spatulate hand has is its intense love of action, energy and independence.

As a rule it is a large hand with fairly long, well-developed fingers. The most striking characteristic of all is the singular independence of spirit that characterizes individuals possessing such a development.

No matter in what grade or position in life these spatulate hands find themselves they always in some form strike out for themselves and assert their right to possess a marked individuality of their own. It is from this hand that we get not only our great discoverers and engineers, but also the whole army of men and women we are pleased to call cranks, simply because they will not follow the rut made by the centuries of sheep that have gone before them. They will break all rules of precedent, not by any means for the sake of eccentricity, but simply because they have an original way of looking at things, and their sense of independence inclines them to resent suiting their brain to other people's ideas.

The Philosophic Hand.—This shape of hand is generally long and angular with bony fingers, developed joints and long nails. People with such a type are, as a rule, students, but of peculiar subjects. They study mankind. They like to be distinct from other people and they will go through all kinds of privation to attain this end. Such people love mystery in all things. In character they are silent and secretive. They are deep thinkers, careful over little matters, even in the use of little words. They are proud with the pride of being different from others. They rarely forget an injury but they are patient with the patience of power. They wait for opportunities and so opportunities serve them. Such hands are usually egotistical, which is in keeping with the life they lead. When in any excess of development, they are more or less fanatical in religion or mysticism. With these hands it must be borne in mind that the developed joints are the peculiar characteristic of thoughtful people, while the smooth, pointed fingers are the reverse.

The Conic Hand.—The conic hand is medium-sized, the palm slightly tapering and the fingers full at the base, and conic, or slightly pointed, at the tip or nail phalanx.

The main characteristics of the conic hand are impulse and instinct. There is a great variety in connection with this type but it is more usually found as a full, soft hand with pointed fingers and rather long nails.

Such a formation denotes an artistic, impulsive nature, but one in which love of luxury and indolence predominate.

The Psychic Hand.—The most beautiful but the most unfortunate of the seven is what is known as the psychic hand. It is in formation long, narrow and fragile looking, with slender, tapering fingers and long, almond-shaped nails. Individuals with the psychic hand have the purely visionary, idealistic nature. They appreciate the beautiful in every shape and form. They are gentle in manner, quiet in temper. They are confiding and they instinctively trust anyone who is kind to them.

They have no idea of how to be practical, business-like or logical. They have no conception of order, punctuality or discipline. They are easily influenced by others.

Color appeals to this nature in the highest possible way.

This type is unconsciously a religious one. It feels what is true but has not the power to seek truth.

These individuals have the intuitive faculties highly developed.

The Mixed Hand.—The mixed hand is so-called because the hand cannot be classed as square or spatulate, and so forth; the fingers also belong to different types.

The mixed hand is the hand of ideas, of versatility and generally of changeability of purpose. A man with such a hand is adaptable to both people and circumstances, clever but erratic in the application of his talents.

He will be brilliant in conversation, be the subject science, art or gossip. He may play some instrument fairly well, may paint a little, and so on. But rarely will he be great.

When, however, a strong line of head rules the hand, he will, of all

Book XVI

SELF CARE FOR WOMEN

HEALTH IN RELATION TO BEAUTY.

The Cultivation of Beauty.—It is natural for every woman to desire to be beautiful and attractive, and to preserve whatever beauty she may have. This desire should not be condemned as a sign of vanity or frivolity, since it is the expression of a sound and healthy instinct. To desire this is not only right and proper, but it is the duty of every woman to be just as attractive as her physical and mental endowments, and every reasonable effort to preserve them, will permit.

Beauty and Health.—Beauty is normally an indication of health. The statement is generally accepted that true and lasting beauty results from good health, a kind and noble spirit and correct habits of eating and exercise, a wholesome state of body and mind, which means fitness for the sphere of womanhood and motherhood. It is a part of the great plan of Nature that women should be attractive. Beauty depends upon various factors in the way of contour, coloring, skin texture, the expression, the mental and spiritual state, and abundant vitality in the features and body as a whole. All of these physical factors may be lacking in a given case, and by attention may be developed and may always be improved by cultivation of the right kind. In short, beauty is a potentialty in the case of every woman and needs only to be developed and realized by proper cultivation of those conditions upon which it depends.

Regularity of Features.—There is one factor that largely determines the beauty and outlines of the features which is practically beyond our power to control, and that is the fundamental conformation of the skull and face, giving us our characteristic physiognomies. There is no question that some are naturally gifted with greater symmetry and regularity in this respect than others. But beyond this condition of features, really incidental, it can hardly be said that anyone has any important natural advantage over another in the matter of personal appearance.

Furthermore, when one stops to analyze the part played by the features in determining facial beauty, it becomes apparent immediately that even this factor is greatly overrated. For the features alone do not constitute beauty. It is only abounding health, vitality and natural good coloring, resulting from them, that make the face attractive; and where there is health, vitality, intelligence, and a kindly heart, all features and all faces are attractive and even beautiful.

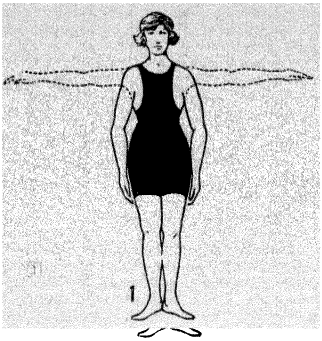
Health the Foundation of Beauty.—From what we have just said it will already be evident that the indispensable factor in the cultivation of beauty is health. Men may strive for fame and fortune, and may fail; but the woman who tirelessly works for health and beauty and follows the proper, natural methods for attaining them, will succeed. Beauty expresses internal harmony and well-being. Beauty means pure, rich blood, a condition of internal bodily cleanliness, active circulation, good nutrition as a result of faultless digestion, and perfect bodily functioning. In short, beauty is a quality that necessarily accompanies a condition of good health and physical efficiency.

The woman who would make herself attractive, therefore, in the very beginning cannot do better than make a careful study of the section on "Physical Development for Women," Book XVII, Part II, in connection with these suggestions which follow:

Three Conditions.—There are three classes of women who may be interested in this subject of health and beauty—the young who are naturally beautiful and all of any age who have with no special care preserved the natural beauty of health; therefore, these wish to conserve themselves and keep the charm and attractiveness which nature gave; in the second place, those who have been careless in over-eating and under-exercising and are becoming heavy and dull in appearance, perhaps having an inherited tendency to obesity, these should understand that a remedy lies within their power; and thirdly, those who lack flesh and fatness and have become lanky and gaunt, who must increase their flesh and fat, these should realize that they may become the most beautiful of all, now that slimness has become the ideal of beauty today. The conditions of all womankind will be discussed under three classifications, Preservation, Reduction and Upbuilding.

I. REDUCTION OF SURPLUS TISSUE.

Obesity.—The person who has neglected herself until accumulations of fat—adipose tissue, the scientists call it—have made pads under the chin and back of the neck, who has stored surplus tissue over the body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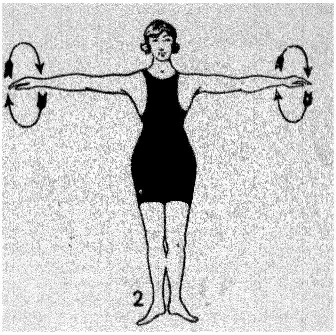
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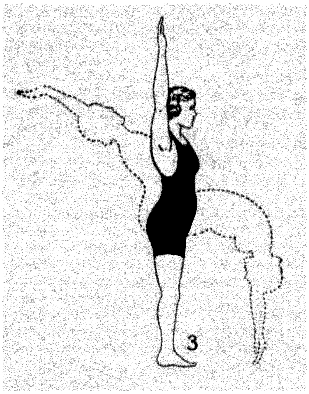
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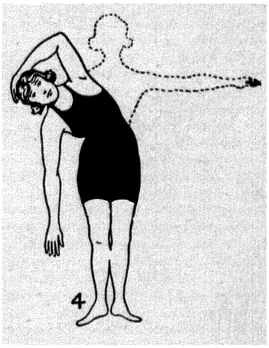
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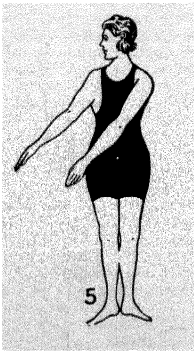
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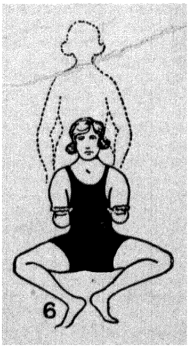
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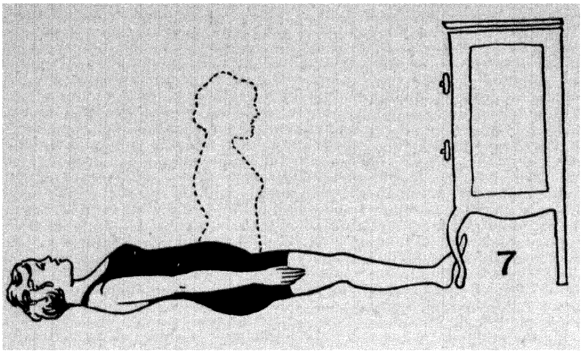
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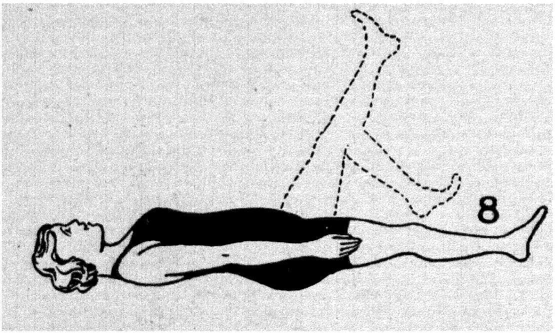
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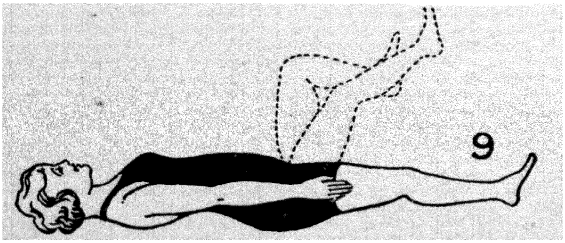
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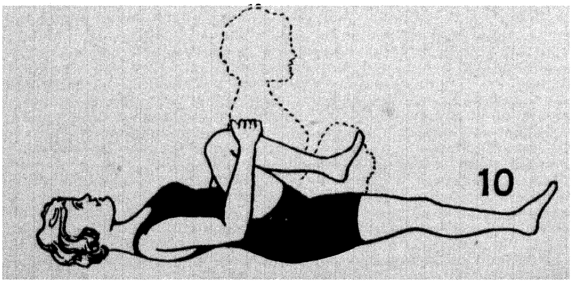
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7. To flatten the stomach and strengthen the waist and abdomen, lie on the back upon the floor, and, placing the feet under a dresser or chiffonier, keeping the arms at the side, rise to a sitting position with knees and legs straight. Let yourself back gradually; do this complete movement the required number of times, counting each time.

8. This exercise is to strengthen the leg muscles. Lie flat upon the floor; raise one leg and kick five times by bending the knee up toward the body and straightening out the leg. Do this alternately; raise both legs, kicking them together, and count with each motion.

9. This is to give further exercise to the legs. Lie on the back and raise one leg; now use a pedaling movement as on a bicycle; lower it, then raise and move the other the same way; raise both and continue the movement the regular number of times, counting regularly.

10. This is to exercise the muscles about the middle parts and reduce the hips and stomach and strengthen the intestines. Lie flat; bring up one knee to the chest and clasp both arms about it; then rise to a sitting position; then lie down again, lowering yourself back slowly. Do this with the other leg, keeping the motionless leg on the floor straight and unbending all the time; do this regularly, counting.

The Bath.—Allusion has been made to the morning bath, which naturally will follow the exercises. It should not be very warm, but if a cold bath cannot be taken, as is the case with some, use tepid water. Other baths for especial purposes will be described later.

DIETING FOR SPECIAL REDUCTION.

Clearing the System.—In order to remove poisonous matters from the system and bring it into responsive condition, it will be absolutely necessary almost to fast for a few days. It will be required to omit the use of the following foods, both in the preliminary work and regularly: sweets, candies or deserts, pastries, butter, fried foods, rich salad dressings, rich meat and fruit sauces, starchy foods, as potatoes, rice, macaroni, spaghetti and noodles, white bread; but whole wheat or bran bread is allowed. Perhaps the hardest denial will be that of white bread, potatoes and butter. As these are the most important articles of diet to omit, the struggle will be well worth making. A method used by the Austrian royal family to avoid obesity may be observed if there is a strong physical inclination to fatness. This is to live chiefly upon buttermilk periodically, drinking black coffee occasionally in that period and as much as two quarts of buttermilk may be consumed for the day. The program is to take one day for this treatment the first week, the second week two days, the third week three days, the fourth week two days and the fifth week one day. This is one form of liquid day; another is described for weekly observance, in the *Daily Program, Including Diet,* which follows. One day a week of this diet will keep the size of the stomach normal, hold the weight as desired and aid in preserving a fine complexion.

Dieting.—In order to make a radical change in the ungainly and unhealthy condition of obesity it is necessary to use stern repression upon the appetite, until the excess of fat has disappeared. The meals after reduction has been accomplished must be prudently prepared in order not to relapse into the old condition. Be prudent in eating.

Food for Prevention of Obesity.—All the vegetables, practically, may be eaten; dried beans, lima beans and peas are somewhat high in calories; but as a meat substitute they are excellent and may be used occasionally. Other vegetables may be taken, cooked or raw, as celery, carrots, beets, string beans, asparagus, spinach, tomatoes, onions, cauliflower, cabbage, brussels sprouts, turnips, vegetable tops, such as are used for greens, dandelions, mustard, beet tops, etc. For more solid foods, fish may be taken, except salmon, and should be boiled, baked or broiled, not fried. Meat, except pork, may be taken sparingly, especially in cold weather, once or twice a week, on other days using fowl, fish or eggs. It is a habit with some to eat a slice of pineapple after meat to aid digestion.

TREATMENT FOR REDUCTION.

The following schedule will be found to be efficacious in reducing obesity and in preserving a condition normal to the individual nature, neither too fat nor too lean.

REDUCTION, RAPID AND IMMEDIATE.

Special Baths.—After diet and exercise have been instituted in order to accomplish a radical and rapid change of appearance, when there is no heart disease or physical condition to interfere, a strenuous treatment with hot medicated baths and sweating will accomplish a wonderful transformation. The necessary materials are a rubber sheet, two yards square, a few pounds each of dried pine needles and balsam leaves, six or eight ounces of pine oil and several pounds of Epsom salts. These articles may be ordered advantageously from the wholesale druggist. Put in cloth bags a handful each of pine needles and balsam leaves, two pounds of Epsom salts, one teaspoonful of pine oil and sew up the bags. Use one in a bathtub of hot water, hot as can be borne. After stepping in, turn on hot water as long as can be endured and remain in the bath thirty

TREATMENT FOR REDUCTION

The following schedule will be found to be efficacious in reducing obesity and in preserving a condition normal to the individual nature, neither too fat nor too lean.

SCHEDULE FOR REDUCTION AND PRESERVATION OF FORM

1st, 2nd, 3rd Day	4th Day	5th and 6th Day	7th Day	Daily 8th Day and On	Liquid Day
A.M. 1 lemon and hot water	Same	Same	Same	Same	Same
Exercise 10 min.	Same	Same	Same	Same	Same
Bath, tepid	Same	Same	Same	Same (or cold)	Same
Breakfast, 1 orange or its juice, coffee	Same	Grapefruit, coffee, triscuit	Glass orange juice 2, whole wheat 2, coffee	*c* See list below	Coffee, 1 zwieback or buttermilk all day
Lunch, cup hot water	Lunch Celery *w tomato, carrot, lettuce, oil, lemon, salt, tea *w lemon	Chop, raw cabbage *w pimento, lemonade, 1 zwieback	Tomato-lettuce salad, 1 zwieback	*d* See list below	Lunch 11 A.M glass milk, 3 P M. 1 cup soup, thin cocoa
Dinner, grapefruit, or orange juice, or apple	*a* Dinner See below	*b* Dinner See below	Dinner Lettuce salad, slice chicken, boiled onion, pineapple	*e* See list below	Dinner Cup soup. Later 1 glass milk
Water daily, 8-10 glasses		Same	Same	Same	
Exercise, walking, golf, gardening, etc.	Same	Same	Same	Same	Same

a—4th day, dinner Cooked carrots, spinach, string beans w tomatoes—1 slice toast, whole wheat bread

b—5th and 6th day, dinner 2 eggs poached and spinach, lettuce-beet salad, 1 baked apple or fruit salad w toast and tea, if plain meal is desired

c—Daily, breakfast Coffee w toast or bran muffin or zwieback or prunes w dry cereal and milk, or baked apple, or scrambled egg on toast or stewed figs on toast

d—Daily, lunch Tomato soup, celery, baked apple, zwieback, or spinach salad w hard-boiled egg and pimento w 1 slice toast, or Waldorf salad (celery, apples, nuts on lettuce w Fr dressing), 1 or 2 bran crackers, or veg soup w cracker, or lettuce salad w chili sauce and mayonnaise, 1 cracker; or vegetable salad w 1 zwieback

e—Daily, dinner 2 eggs poached on toast w slice bacon, and orange salad and little Fr dressing, or boiled fish, tomato aspic on lettuce, as salad garnished w chopped egg and nuts, or cottage cheese, also fruit, 1 lean lamb chop, string beans, lettuce w Fr. dressing and lemon jelly, or roast chicken, slice pineapple, combination salad, or vegetable dinner w. 1 corn muffin, or for special, as on Sunday, small steak, stewed tomatoes, asparagus w pimento and Fr. dressing, little prune whip

*With

minutes by the clock. Have the rubber blanket spread upon the bed by an assistant, if possible, as this treatment is very difficult without help. When ready, leave the bath, wrap immediately in a woolen blanket, then remove it and quickly roll up in the rubber blanket, arms at the sides, completely covering the person so as to exclude air. Spread a light blanket on top. Put an electric heating pad at the feet and on the stomach or use hot water bottles and spread at least two warm woolen blankets on top of this. If the arms need no special reducing they may be taken out carefully in half an hour and a large towel spread on the chest and under the arms, when they may be dried and laid outside. In another half hour she may leave the rubber blanket, which will be found to contain considerable water from the perspiration. A warm shower should be taken and a rubdown with a mixture of alcohol and witch-hazel, equal parts, and ten drops of lavender oil. This treatment should be taken twice a week, or three or four times, if this number can be endured. You should weigh yourself before and after each treatment. You can drink water freely during the process. The night following the Epsom salts bath, a starch bath, a half pound of starch in lukewarm water, should be taken, the body being dried by patting with a soft towel and not rubbed. Occasionally between these treatments a "tonic bath," as it is termed, may be advantageously used. The ingredients are one quart of white wine vinegar, one ounce 10 per cent aqua ammonia, and one-half ounce of lavender water. One cupful is used in a bath, and for a sponge bath a tablespoonful in a basin of water will relieve weariness.

GENERAL IMPROVEMENTS.

Oily Skin.—This is the general condition of the skin in the state of obesity, especially when this condition is due largely to eating too much and of the wrong foods and at improper times. The skin becomes oily and muddy, the pores clogged and the complexion marred by so-called blackheads and whiteheads. The guiding principle in this respect is that the skin must be kept clean and nourished.

Preparing the Skin.—1. To remove blackheads cover the face and neck with camphor ice; fill a basin with boiling water and, placing a shawl or large Turkish towel over the head and surrounding the water, let the face and neck steam until the perspiration is flowing well. This softens the blackheads so that they can be pressed out with the two forefingers, covered with a piece of linen. When they are removed, rub off the camphor ice and put on a tincture of green soap, washing it off in five minutes. Wash this off with very hot water, gradually cooling the water, and apply an astringent; as good as any is: witch-hazel, eight ounces; tincture of benzoin, one-half ounce, which may peel the skin, but that will on the whole be beneficial.

2. To remove whiteheads, use a sterilized needle to take out the heads and press out the hard matter within, using the same astringent afterward.

Treating the Skin.—After this preliminary process the skin should be treated so as to acquire a healthy action. For this purpose use a cleansing and massage cream made as follows:

Oil of sweet almonds	8 ounces
Spermaceti	½ ounce
Tincture of benzoin	1 ounce
Sodium borate	33 grains
White wax	½ ounce
Rose water	4 ounces

If a quicker acting preparation is desired to be used without much spatting in, add:

Eucalyptus oil	ounce
Tannin	½ ounce

To prepare, mix the rose water, sodium borate and eucalyptus oil, if this is used, adding slowly the benzoin; melt the white wax, the spermaceti and almond oil in a double boiler; while beating this mixture with a wheel egg beater, after it has been melted, add very slowly the rose water mixture so that all are thoroughly mixed and emulsified in order that the cream may keep well. Use after the morning bath, applying very freely under the chin, around the eyes, where the creases come between the ends of the mouth and the nostrils. Rub hard with an upward motion by the fingertips, especially under the chin; but around the eyes rub toward the temples. Slap it in smartly and deeply so that the blows sting and the muscles are well exercised. Do this at first for a fortnight early; again in the morning and once again just before dinner (in the afternoon). Then use it twice a day until a change has been effected, afterwards once a day as a preservative. Just before retiring treat the skin thoroughly as follows: Scour the skin with warm soft water and mild soap by means of a camel's hair complexion brush, rinse in warm clear water, letting it come cold gradually, then rub with ice until the flesh is tingling; stop a minute and apply the ice again. Do this repeatedly to prevent sagging where the fat is removed. At last bathe with the witch-hazel-benzoin astringent. In case there is itching of the skin, it may sometimes be traced to too much soap used in the bath and may accompany excessive dryness, and is oftentimes due to imperfect circulation.

Teeth.—Beautiful teeth are most important. Follow general directions for their care. See *Teeth,* Index.

Pimples and Acne.—(Pimple-like swellings of the fat glands.)—These eruptions are due to disorders of the blood and system from over-rich food and improper assimilation. If there is constipation, a fruitful cause of skin trouble, try this laxative food: Take bran, four spoonfuls; flaxseed, one spoonful; cover in a bowl with one-half cup boiling water. It will steam through in two or three minutes when it can be covered with half milk and half cream sweetened with brown sugar or with a tablespoonful of honey. This should be eaten twice a day regularly and eight or ten glasses of water taken daily. The pimples should be opened, pressed out with absorbent cotton wet with peroxide of hydrogen or alcohol and touched with iodine. The skin may be washed with diluted witch-hazel. The dieting is the essential part of the treatment. The blood must be cleansed by diet, daily baths, open air exercise and discharge of all waste from the body. Acne is cured by this method and in addition a gentle massage cleansing with castile soap and a camel's hair complexion brush. Ichthyol ointment has been found to be very helpful. This wash may be applied just before retiring:

Oil of sweet almonds	4 drachms
Glycerine	1¼ drachms
Talcum	1½ drachms
Rose water	4 ounces
Lime water	2 ounces

Neck and Throat.—Treatment of the neck and throat must be specially made in order to remove the double chin, the pad behind the neck and its abnormal size which is frequently almost a deformity. This is accomplished by assisting the system with exercise, massage and masks. First sit with the chin held in and the head up. Tip the head backward ten times, then forward till the chin meets the chest, straining upon the muscles each time, doing this ten times. Bend the head over to the right shoulder ten times, then ten times to the left shoulder. Face the front; lean the head over again to the right shoulder ten times, then to the left shoulder ten times; while in this position roll the head in a circle ten times; later the number of times may be increased. Apply almond oil cream, which is an admirable skin food, and rub hard in an upward direction with both hands and spread the hands gradually apart, keeping the thumbs under the chin, the fingers rubbing upward as far as behind the ears. When the cream is well placed slap the whole surface with the palm smartly, throat, neck and back until there is a lively sensation. Use ice, as was done on the face, as long as it can be endured. Then with an upward motion apply the white of an egg to all the neck; as a mask.

It may be used also on the face. Let it remain and keep motionless until it hardens, allowing it to stay in place two hours. This, with the ice and massage, will keep the reduction from leaving any undesirable traces like folds or wrinkles of the skin. Sponge off at the end of the two hours with tepid water and apply an astringent like the witch-hazel-benzoin cream already explained.

Reducing the Bust.—It is not safe to practice massage upon the breasts since they are too delicate. Use this preparation: In one gallon of boiling water put two pounds of Epsom salts and keep it in a granite saucepan with a cover. Heat some of the solution and wet a large turkish towel laying it over the busts and cover with a rubberized cloth to retain the moisture and keep it in place a half hour. Wash off with warm water and apply a reducing solution made as follows: Gum camphor, two ounces; dissolve in one pint of witch-hazel or pure alcohol; dissolve Epsom salts, one pound, in one pint of boiling water and add one ounce of colorless iodine, then unite the mixtures. Rub on the bust or any fatty spot twice a day. This is excellent for reducing. Cold water in some cases, applied frequently, has caused reduction. It is a slow process in any case and may require two months to bring much result. For gymnastics twist the body at the waist, and arm and shoulder movements will affect the muscles so as to alter the form into slimmer shape. These treatments with the internal influence of the diet cannot fail ultimately to create a marked improvement.

The Hair.—It may be necessary to treat the hair twice a day at first to restore the processes of nourishment and elimination which have become suspended or disordered. To massage place the balls of the fingers and the thumb in a small circle on the head, beginning with the top of the head, and move them in a circle several times, pressing hard. Go over the whole scalp in similar circles. Brush out the hair every night, brushing upward, letting the air into it. If the hair is over-oily rub the scalp with warm vegetable oil at night and wrap the head in a towel. The next morning use a shampoo of one slice of castile soap, boric acid, powdered henna, two ounces; boiling water, one quart; simmer till the soap is dissolved. First wet the head thoroughly with very warm water. Rub in a cupful of the shampoo mixture thoroughly through the hair and into the scalp. Rinse with hot water, working the scalp with the fingertips, and apply the mixture the second time; rinse off this application. Then press the hair free of water; use a third cupful, well rubbed in; tie a towel about the head and leave it for about ten minutes. Wash out the mixture, rinsing several times. Then rinse with a lemon wash, one lemon to two quarts of hot water. Dry the hair in the sun with warm towels and treat with a soft brush. Use on alternate nights the following mixtures:

Tonic for Oily Hair

Resorcin	½ drachm
Tincture of benzoin	½ fluid drachm
Tannic acid	2 drachms
Alcohol	7 fluid ounces

Stimulant for the Scalp

Fluid extract capsicum	3 drachms
Bay rum	½ounce
Tincture of cantharides	1 drachm
Distilled water	1 ounce

The Eyes.—1. Sit comfortably and hold the head firmly. Turn the eyes upward to the ceiling then downward to the floor, and do this ten times, counting each time.

2. Turn the eyes to the right slowly, then to the left. Turn them downward, then to the right, then downward to the left, then upward, and do this series of movements three times, counting regularly.

3. Turn the eyes all around three times. Do this set of three motions twelve times. Make these motions steadily and slowly, and if the muscles of the eyes feel tired, stop and rest, counting each time.

A massaging of the eyes may be done in this way: Place the hands so the fingers are at the edge of the hair and the balls of the palms at the outer corners of the eyes, then press upward gently and firmly without moving the palms, giving a very light touch, and move the palms in circular motion just touching the surface. Warm vaseline in a cosmetic pan and apply the liquid with a camel's hair brush to the roots of the eyelashes and eyebrows to improve the hair. The eyes should be bathed every morning in a boric acid solution, and a dash of cold water once or twice a day will aid in enlivening them. There are methods practiced of darkening the hair of the eyelashes and eyebrows with an eyebrow pencil or brush which may be practiced if the person desires.

The Hands.—If the hands are hard and coarsened by work, treatment will greatly improve them. It will be advisable to use large rubber gloves when the hands are put in hot water, and hand lotions should be applied. In the treatments described gloves should be worn at night—cheap kids, two or three sizes too large. The lotion is made as follows:

Glycerine	1 ounce
Carbolic acid	2 drops
Tincture of benzoin	½ ounce
Rose water	8 ounces

Wash the hands at night in soft, warm water and soap, using a soft handbrush. Even a fleshy person in these treatments should use oil to begin with, warm olive oil and cod liver oil, equal parts, and hold the hands in it fifteen minutes. Wipe this off gently and rub the skin thoroughly with a cut lemon, letting it dry on. Put on the kid gloves for the night. The hands and fingers should be massaged as follows: Cover thoroughly with the skin food cream. After putting it on, rub like the fingers of a glove from the tips toward the palm, pinching the ends as already described. Massage with a rotary motion the palm and the outside of the hand. Rotate each finger joint; twist the flesh back and forth between the first two fingers and thumb when you massage; rub the knuckles with a circular motion and rub each finger and the thumbs toward the tips, squeezing each at the nail to change from spatulate shape to tapering. Wash the hands in soft water and mild soap and rinse in cold water. Dry thoroughly and in cold weather use a lotion.

The Nails.—The implements and articles needed for domestic manicuring are: One flexible steel nail file, emery boards, orange wood sticks, absorbent cotton, one pair of cuticle shears, a cuticle knife, buffer, nail-brush, cuticle cream and oil, bleach and polish. To treat the nails first use a file from the edges to the center, keeping the shape of the fingers, unless they are square, when the nails may be rounded a little. Some polish the nails at this stage, using the nail polish and buffer. Then hold one hand in warm, soapy water to soften the cuticle. Dry the hand and rub each nail with the orange wood stick, tipped with absorbent cotton; with the knife scrape off the loose skin at the base of the nails. Press the cuticle back with the stick and trim any hang-nails or loose skin. Pushing back the skin will eventually bring out the half moons on the nails. When the nail is finished cover with cuticle cream. When all the nails have been treated, wash the hands and nails; then use the tinted polish and the buffer. The last thing go over the base of each nail with cuticle oil or olive oil and press it on and under the skin. Manicure once a week and treat the nails every night with oil; press down the cuticle when drying the hands and polish every morning and each evening before dinner.

Care of the Feet.—The feet should have exercise, massaging, and not be afflicted with corns or callouses, and the stockings should be comfortable in texture and size. After bathing dust boric acid or talcum powder or a mixture of the two between the toes and put some upon the soles of the feet. For callouses massage the feet with this mixture: White vaseline, four ounces; eucalyptus oil, one teaspoonful; oil of wintergreen, one teaspoonful. Mix thoroughly. The callous, after being thoroughly rubbed with this mixture, should be worn off with a pumice stone, and the tender skin beneath treated with cream. To exercise the foot after rubbing cream upon it, rub each toe as you did the fingers, up to the ankle, having one hand on top of the foot, the other beneath. Move each toe from side to side, then in a circle, then bend each backward and forward. Hold all the toes in one hand and bend the same way so as to stimulate the muscles of the foot. If the feet are inclined to undue perspiration, bathe them in a basin of warm water and a teaspoonful of powdered alum.

Persistence a Necessity.—Many have desired to possess the improvements that such treatments as herein described will at last effect, but the self-denial and continuous care have been too exacting, and after a few days the attempt was given up. If the reduction of overfatness is really desirable any of the sacrifices which have been mentioned will not be too much. Unremitting care must be continued after an improvement in the form has been accomplished. The "liquid day" should be observed at least once a week. Besides careless eating cannot be indulged in without again bringing on the condition, the removal of which required great effort. It must be considered that the improved appearance is only part of the result. Improved health and longer life are sure to follow.

II. UPBUILDING OF DEFICIENT TISSUES.

Emaciation and Depletion.—This condition of thinness and undernourishment may be remedied as well as that of obesity. The repair of damage to personal appearance from indifference to food and exercise, resulting in excessive leanness, should begin with nearly the same process as the reduction of fat and flesh. It is accomplished likewise by a course of diet, exercise and treatment. The system must be cleared out and cleansed of accumulated and depleting poisons. There must be balanced foods, baths, exercise and sufficient rest so that there may be proper assimilation and a good appetite. This means hard work and sacrifice.

Preparatory Upbuilding.—This preparation should be quite similar to the preliminary work of reduction, since in both instances the system must be cleansed before any change in the figure can take place. Begin on rising with two cups of steaming hot lemonade without sugar, a half lemon in each. Follow with the exercises described on page 1624 and the tepid bath. Go through the program for reduction in the first three days. It may result in loss of weight, but this is undesirable material and the system should be rid of it.

Exercise for Upbuilding.—It is as necessary to exercise for development of form and figure as for reduction of excess flesh and fat. The tone of the muscular system enables it to take on additional tissue and round out the muscles so as to give symmetrical shape. A small, thin person cannot be made large nor a tall person short and petite; but the correct proportions may be established for each. This individual perfection will be each person's own type of beauty, and if this is brought out as nature intended, will be most attractive and delightful. Therefore the same exercises should be continued after development is established to keep up the circulation and healthy activity of the system.

A schedule for fattening and developing follows; this may be taken as a daily guide:—

TREATMENT FOR DEVELOPMENT.

This schedule will be found of good service in developing the face and figure when there is a scarcity of flesh and fats, and in preserving a desirable condition of symmetrical completeness of form and features.

Foods for Upbuilding. —Tonics to encourage appetite for the purpose of development are not needed as the system acquires a proper tone, both appetite and the right assimilation will naturally appear. Fruits and vegetables are excellent and should form a large part of the dietary. You should drink water freely, eight or ten glasses per day, hot milk, cocoa and chocolate, a little tea and coffee now and then. Use cream in these on cereals; also take soups, cream, meat and vegetables, potatoes and rice. Such starchy foods as macaroni, spaghetti and noodles should be taken sparingly, only one at a meal. Ice cream and pudding made of corn starch, egg, milk, tapioca, etc., are good. Candy aids in the work of adding weight. You may eat between meals a mixture of milk and egg or milk chocolate or drink a cup of cocoa with cream. In case of indigestion stop all food except fruit juice and try several lighter meals a day, five or six instead of three. If you make a variety in your eating by using heavy foods along with vegetables you will be able to take a large number of calories every day, and when you have obtained a good condition you will be able to maintain it; but keep a careful watch of your digestion and the regularity of your system.

Special Upbuilding Treatment.—The beauty baths are of great importance for the depleted person. The salts-pine bath, explained under the head of *Reduction,* is helpful, and a benefit for neuritis or rheumatism. All the baths which are there described are good occasionally to keep the skin and the system clear. A special beauty bath is made of oat meal, two pounds; almond meal, two pounds; sodium borate, one ounce. For one set of bath bags add one greated cake of castile soap, and for the other bags omit it. Cut pieces of cloth 8 x 10 inches and sew three edges of the bag, fastening up the fourth edge when the bags are

TREATMENT FOR DEVELOPMENT

This schedule will be found of good service in developing the face and figure when there is a scarcity of flesh and fats, and in preserving a desirable condition of symmetrical completeness of form and features.

SCHEDULE FOR DEVELOPMENT AND PRESERVATION OF FORM

1st, 2nd, 3rd Day	4th Day	5th and 6th Day	7th Day	Daily 8th Day and On	Liquid Day
A.M. 1 lemon and hot water	Same	Same	Same	Same	Same
Exercise 10 min.	Same	Same	Same	Same	Same
Bath, tepid	Same	Same	Same	Same (or cold)	Same
Breakfast, 1 orange or its juice, coffee	Same	Grapefruit, coffee *w cream, triscuit	Prunes *w cream, 2 eggs coddled, corn muffins, cocoa, marmalade	*d* See list below	Coffee *w cream or buttermilk all day
Lunch, cup hot water	Lunch Celery *w tomato, carrot, lettuce *w mayonnaise, tea *w cream	Chop, raw cabbage *w pimento, lemonade, 1 zwieback	Lunch Salad *w mayonnaise, baked sweet potato and butter, chop, figs, dates, walnuts, maple syrup	*e* See list below	Lunch 11 A.M. 1 milk, 3 P.M. 1 cup soup, cocoa and cream
Dinner, grapefruit, or orange juice, or apple	*a* Dinner See below	*b* Dinner See below	*c* Dinner See list below	*f* See list below	Dinner Bowl soup. Later, glass milk
Water daily, 8-10 glasses				Same	Same
Exercise, walking, golf, gardening, etc.	Same	Same	Same	Same	Same

Every night take a large bowl of warm malted milk

a—4th day, dinner Cooked carrots, spinach, string beans w tomatoes, peas and mashed potatoes, slice whole wheat bread and butter

b—5th and 6th day, dinner Creamed chicken on toast, creamed stewed green peas, boiled brown rice, salad lettuce w Roquefort cheese dressing, prune whip and cake, small cup coffee and cream

c—7th day, dinner Vegetable soup, roast beef and potatoes, spinach w bread and butter, dessert, floating island

d—Daily, breakfast Baked apple and cream, cream of wheat and top milk, 1 poached egg, toast and butter, milk or coffee w cream; or, if preferred, sliced orange; omelette w. bacon, bran muffins w strawberry jam, coffee w cream, or chocolate, or this, stewed figs and cream, bowl oatmeal; slice broiled ham, toast and coffee

e—Daily, lunch Cream of celery soup, green salad w. mayonnaise, sandwiches whole wheat bread and cream cheese, or, if preferred, creamed chipped beef on toast, baked potato, mold of fruit gelatine and cake, or spaghetti and cheese w Italian sauce, green salad of chicory, lettuce, parsley, 2 slices pineapple, Fr dressing w abundance of oil

f—Daily, dinner Asparagus on toast, dusted w grated Roman cheese w a tablespoonful or two of browned butter, lamb chops, green peas, lettuce w. French dressing and steamed fruit pudding, or, if preferred, pea soup, roast chicken, mashed potatoes w gravy, sliced tomatoes, ice cream and a slice of home-made cake.

*With.

filled. Sometimes when the skin is dry use the soapless bag, at other times use the one with soap. One bag in a bath makes the water milky, whitening and softening the skin. It is necessary to use a face mask in order to treat the skin effectively. Cold cream or "skin food" to use with it is made as follows, and the home-made article is just as good as any:

Oil of sweet almonds	4 ounces
White wax	½ ounce
Pure lanolin	2 ounces
Cocoa butter	2 ounces
Spermaceti	½ ounce
Rose or orange flower water	4 ounces
Sodium borate	33 grains

Melt the oils and beat in the sodium borate and water. For the mask, cut a piece of muslin to cover the face and neck, making holes for the eyes, nose and mouth. First bathe the face with castile soap and tepid water, rinsing with hot water. To line the mask use oat meal, one cupful; almond meal, one cupful; juice of one lemon and a little hot water to make a paste. Apply the cream or skin food as described above, patting it in briskly and well, then put on the prepared mask and cover the head with a large Turkish towel. Use this treatment every day for some time. After an hour remove the mask and sponge the face gently with warm water containing boric acid, one teaspoonful to a quart; rinse with cold water, then pat in an astringent mixture: glycerine, two ounces; rose water, eight ounces; benzoin, one ounce; carbolic acid, three drops, which bleaches and softens the skin and closes the pores. The skin should be oiled, using pure vegetable oil, once a week. Heat the oil and set it in a hot water bath to keep warm. Pat this into the skin of the face and neck by a piece of absorbent cotton or the fingertips, puffing out the cheeks hard while applying it. Strike the face hard enough to start the blood, but not to move the muscles, since reduction is not desired. Pat around the eyes and rub toward the ears. For nightly use the cream is especially recommended after the skin has been bleached by buttermilk or a mixture of half lemon juice and cream, pure lemon juice or peroxide of hydrogen. In the morning wash off the bleach, massage the face well with the skin food, give it an ice treatment as before described and for the day put on a vanishing cream and a little cream powder.

The Hair Treatment.—The explanation for hair treatment under *Reduction* will apply here, therefore you are referred to page 1631. If the hair is dry and stiff use warm vegetable oil, two tablespoonfuls, and lanolin, one tablespoonful, in a small dish, and use as hot as can be borne; then part the hair in strands and go over the scalp working it in.

Wrap the head in a large, soft towel. For shampooing the hair use castile soap dissolved in boiling water. Practice the lanolin massage in the morning, heating it at the same time with electricity if possible. Wash the hair at least three times now with the castile soap and rinse a half dozen times; rub dry in the shade and fresh air. Use a dandruff tonic until the scalp is clear, then on alternate nights apply a dry hair tonic made as follows, and the scalp stimulant given on page 1632.

Dry Hair Tonic

Vaseline	1 drachm
Pilocarpine nitrate	1 grain
Alcohol to make one ounce	

Dandruff Tonic

Cocoanut oil	⅛ ounce
Resorcin	15 grains
Pilocarpine nitrate	1 grain
Witch-hazel	1 ounce
Eau de Cologne	3 ounces

General Treatment.—For the care of the eyes, nails and feet, see these headings under *Reduction.* In order to improve the hands, use the following treatment: soak them in a mixture of warm olive oil and cod liver oil, equal parts, to soften and plump them. After wiping off at the end of five minutes, rub in lemon juice as before described under the previous treatment of the hands under *Reduction.* The lemon juice is left to dry on, then a liberal quantity of lanolin is applied and the hands are encased in the night gloves. Exercises for the hand, a little different from those which have been described, are: 1. Spread the fingers upward and outward with open hands, making a pull on the muscles, five times at first, but increase to ten times. 2. Try to reach the wrist with each finger of both hands one after the other, straightening the hand fully each time, for ten times. 3. Try to reach the base of the thumb in the same way ten times. 4. Try to reach the wrist with the fingers together ten times. 5. Try the same to the base of the thumb. 6. Raise the hands to the level of the breast, elbows a little out, and shake the hands and fingers held loosely moving in all directions, counting regularly.

Development of the Bust.—This development is frequently necessary after weaning a baby or after a convalescence. It is a very slow process and requires unremitted daily work. Use fifteen or twenty minutes at night or ten or fifteen in the morning in order to make this treatment regular. You may use the small cup with a rubber top which is employed in massaging to bring up the blood into the surface circulation. It is simpler and somewhat safer to use hot water. A cloth wrung from very warm water is laid over the breasts and covered with a rubberized blanket, when it is allowed to steam five minutes. If the blood is showing pink upon the skin it can be bathed now with hot water and rubbed softly with a mixture of lanolin and coconut oil, equal parts; a flannel may be wet with this preparation and spread upon the person, covered with rubberized cloth or oiled silk over night. Spray or wash the breasts in the morning for ten minutes with cold water. Before retiring it is well to drink of milk with a teaspoonful of glycerine at the time of this treatment to assist the development. Use chest exercises, swimming, rowing, etc., as an additional means. Do not be discouraged if results do not appear at once. Persistence will work a complete change in the course of time, which will progress more rapidly when it has once begun.

III. PRESERVATION OF NATURAL BEAUTY AND FLESH.

Requisite Attention and Care.—A few minutes a day, fifteen or twenty, will do much to preserve the blessings of attractive appearance that may be natural either in youth or as an exceptional natural condition of mature life. It is only necessary to prevent wrinkles, poor complexion and sagging of the muscles as well as loss of flesh. Careful attention to the rules of hygiene is the chief requirement and will preserve the complexion better than any lotion or cosmetic yet invented. Exercise, baths, correct breathing, cheerful spirits, regular and temperate eating promote and preserve beauty. If the pores of the skin are large and the skin is inclined to be oily, extra care must be taken. If there is a natural tendency to corpulency or, on the other hand, to thinness, these possibilities must be considered and regulated.

Facial Exercise.—Of greater value than massage in most cases is facial exercise or, in other words, the active use of the muscles of the face. The muscles of every part of the face should be brought into action, stretching them, contracting them, opening the mouth wide or yawning, then pinching the lips together, opening the eyes wide, then squeezing them together, raising and lowering the eyebrows to the limits of possible motion and drawing the mouth first to one side, then far to the other. Thrust the tongue into the cheek on each side, assume laughing and crying expressions, simulate horror and express as great a variety of other emotions as possible. Finally, simply make faces at yourself in the glass, just as children do. Practice with regular motions and count each time.

Sleep.—There is nothing in the world that will take the place of sleep as a beautifier, and especially sleep in the early part of the night. There is a good reason why the term "Beauty Sleep" has been applied to the hours before midnight. Pay no attention to the theorist who tells you that many people sleep too much. If you sleep in the fresh air, either outdoors or with windows wide open, and without too much covering, it is impossible to sleep too much. There is nothing that you can do in the form of beauty culture that can possibly be of value if you do not allow yourself sufficient sleep.

CARE OF THE COMPLEXION.

Preserving the Complexion.—A beautiful complexion depends chiefly upon two factors, the coloring and the texture. Fortunately in most cases the same measures are effective in improving the skin in relation to both conditions. A perfectly healthy skin is smooth as satin and pleasing in color. Local care of the complexion is of great value and the suggestions we are offering will be very helpful in all cases, but it must be understood that constitutional measures are far more important. In other words, a good complexion depends upon the state of health and of the blood. A good complexion is indicative of health and is seldom possible without good health. Vigorous digestion, active circulation and rich, red blood are conducive to beauty of the skin, and without these fundamental requisites one cannot accomplish much by external means.

Washing the Face.—There is nothing so good for the complexion as cold water. Use plenty of it. Use it several times a day.

Strong soaps should never be used. A pure castile soap is usually to be preferred, and the face should be washed with lukewarm or cool water, using a very small amount of the castile soap. It should, further, be very thoroughly rinsed with cold water, so that all traces of the soap will be completely removed. Do not pull and stretch the skin too much when washing, but use a soft cloth and wash the face gently, with mild friction. Cold compresses may be advantageously applied to the face, using a small towel for the purpose or a wash cloth and using water just as cold as possible. This is a tonic of great value. In drying the face do not rub too vigorously with the towel but gently pat the skin until dry. The reason for this is the same as the objection to excessive massage, namely, that too much pulling and stretching weakens or loosens the connective tissue beneath the skin, and is chiefly beneficial in marked obesity.

Ice as a Cosmetic.—If cold water is valuable for improving the complexion, ice is even more effective in most cases. It has a wonderful tonic effect, closing up the pores, and improving the circulation and the general health of the tissues. It will pay one to take a piece of ice and move it about over the face for two or three minutes, at least once each day. The result will be a glow which will last in some cases for hours, and you will enjoy a feeling of life in the skin that will be gratifying.

If the bare ice seems a little too severe, a cloth or towel can be wrapped around it. Do not try it if subject to neuralgia. For one who lacks color, a treatment of this kind is much more satisfactory than an attempt at painting. The ice treatment will produce better results without any injurious after-effects. If one is particularly lacking in color, the alternate use of hot and cold water, with a final application of ice, will be particularly effective in this direction, but, except for an emergency, the hot water should not be used in this way. In many cases, however, a woman may thus secure a pleasing color which will endure throughout the entire evening at some social affair.

Complexion Treatment.—If the complexion threatens to become thick and muddy, a simple remedy is charcoal, a dessertspoonful mixed in water, milk or syrup, before the bath, so that it may work in the stomach before eating. A teaspoonful of dandelion extract in a glass of water after breakfast daily for a month will clear the skin.

Oily Skin.—Many women complain of oiliness of the skin. This is the result of excessive activity of the oil glands or sebaceous glands. These must not be confused with the sweat glands. The sebaceous glands are located chiefly on the face, neck, shoulders, chest and back, and it is consequently mostly on these parts that pimples and blackheads are located. These glands usually do not become active before puberty. Up to the age of twelve or fourteen the skin is smooth and clear. In the case of some women the sebaceous glands never become very active and they retain the "baby skin" through maturity. From puberty on, however, and especially in youth, all of the glands of the body are very active, including the sebaceous glands, and an oily complexion is often the result. In such cases hot water should be avoided except as one takes a full warm bath once or twice a week followed by a cold sponge. Cold water and ice tend to check the activity of the sebaceous glands and also to contract their pores or ducts. Vanishing cream is the only kind of cream which should be used upon oily skins.

Simple Treatments.—The simple home remedies used by our grandmothers are far more effective and reliable than the innumerable highly priced and widely advertised preparations recommended by the druggist. Infinitely better results, if one wishes local applications, can be secured by the use of buttermilk, lemon juice, fresh milk, mutton tallow and other articles of common household use. Cold water offers a cosmetic infinitely superior to anything that has ever been placed on the market. Paints and powders are not only injurious in many cases, but they fail to produce the appearance of a healthy and beautiful skin. No matter how skilfully applied, there is always the artificial aspect of the skin, and the face so treated never can compare with a beautiful, natural complexion.

Dry Skin.—Those having a very dry skin should be extremely careful in the use of soaps, and even more than usually careful not to use patented preparations for the skin, many of which are irritating and astringent in character. The possessor of a dry skin should use just as little soap as she possibly can, and use only cold water for cleansing purposes. The use of a little cocoa-butter or refined olive oil might be advantageous to supply the deficiency. Cold cream is the kind to use upon dry skins.

Cold Cream for Cleansing Purposes.—Those having very dry skins and who cannot therefore use much soap, will find the use of a pure cold cream or theatrical cream advantageous for cleansing purposes. Simply rub the cream well over the face and then rub off thoroughly with a soft cloth. This will remove the dirt with the cream. Never use a rough cloth for the purpose.

Chapped Skin.—Dry skins, when improperly cared for, are liable to become chapped, especially when too much soap is used and when the skin is exposed to harsh winds and cold weather. The best preventive of chapping is to dry the skin thoroughly after washing, before going outdoors. Mutton tallow is especially recommended for this condition, though olive oil and cocoa-butter are both excellent. A half-and-half mixture of glycerine and rose water, with a bit of benzoin added, is always an effective treatment for chapped lips or chapped hands, to be applied before going to bed.

Enlarged Pores.—Enlarged pores are usually found in connection with an oily skin and particularly require persistent treatment with cold water or ice. These are not the sweat pores. Cold creams are especially undesirable in such cases. A good astringent to help close the pores would be a tablespoonful of tincture of benzoin to a quart of water. Lemon juice sponged upon the skin is also very effective, but should be washed off with cold water or sponged off with milk in two or three minutes. Although we have mentioned astringents, they should be used simply as an emergency treatment and not habitually. Their continued use will always prove detrimental.

Sun and Air.—The effect of sunshine and air upon the skin is generally beneficial. Those who are anemic or whose complexions are pale should especially get a certain amount of sunshine every clear day. Sunshine stimulates the formation of red blood corpuscles. Besides the effect of the sunshine in tanning the skin or developing pigment, it actually increases the undertone of red coloring which indicates health.

comfortable. When using lemon juice full strength, it should either be sponged off with milk or rinsed off with water in a few minutes.

Tomato Juice.—A yellow skin may be made clear by a slice of ripe tomato rubbed well upon the hands, neck or shoulders for five minutes and then rinsed off with water mixed with borax, a teaspoonful of borax to a quart of water.

Strawberry Lotion.—The ancient Roman ladies used strawberries to whiten the skin. Fresh, ripe strawberries may be mashed and strained through a cloth; dilute with an equal part of water and add a pinch of boric acid. This will whiten the skin and make it clear.

Vegetable Juices.—Oily skins may be benefited by rubbing with sliced cucumbers or watermelon, or cucumber pulp may be pounded in a bag, strained, and applied to the skin two or three times a day.

Oat Meal Water.—A little raw oat meal stirred into cold water for washing the face is excellent for making the skin soft and smooth.

Barley Preparation.—When the skin is coarse and the pores enlarged, use as a remedy a mixture of ground barley, three ounces; honey, one ounce, and the white of an egg, one ounce. Spread this mixture upon the face at night, using a cheesecloth protector or mask. Wash it off in the morning with lukewarm water, rinsing with cold water.

Superfluous Hair.—The electric needle is the only absolutely satisfactory treatment for the removal of superfluous hair. Avoid chemical depilatories; they injure the skin and sometimes cause increased growth of hair. Take no chances. A satisfactory home treatment is to use small tweezers and pull out the superfluous hairs one by one if they are not too numerous. They may grow again, but after repeated extractions, you will not be bothered with them further. The following formula has been found useful: Peroxide of hydrogen, two parts; ammonia, one part. Apply daily to the surplus hair; since several applications will be necessary, the treatment must be persistent. The ammonia gradually kills the hair roots and the peroxide bleaches it so it is not noticeable.

Moles and Warts.—These blemishes may be destroyed by the electric needle, also by the application of a mild solution of nitric acid, one part acid to ten parts of water. It is recommended, however, that the nitric acid be used with caution, as this treatment may leave a scar.

Birth-Marks.—It is best not to experiment with birth-marks, as nothing can be done for them in most cases.

Washing the Hair.—Strong soaps should not be used on the hair, only a pure castile soap, lathering and rinsing very thoroughly. A very satisfactory method of washing the hair is with an egg shampoo. Beat up one or two fresh eggs with one tablespoonful of water and rub this thoroughly into hair and scalp five minutes or more with the fingertips. It may then be rinsed off several times with cool water and pure castile soap. The frequency of the treatment will depend upon the character of the hair. When the hair is dull and dry, one should not wash it often and should use the egg shampoo. When the hair is very oily and when there is dandruff, periodical washing will be required; perhaps once a week or every two weeks.

Brushing the Hair.—The hairbrush must always be of long bristles, never of metal, and the comb should be coarse. Gentle pulling of the hair, not too hard, supplementing brushing, each night before going to bed, is of great value. The hair must be dry before it is brushed or combed. First a towel should be rubbed over the hair to take off the bulk of the water and, when only moist, finish with the hands, rubbing the scalp with the fingertips till the hair is dry, which will not take long. Then last, rub the hair between the hands to fluff it up. The brushing may take twenty or thirty minutes, though the usual custom is about forty strokes of the brush. It is an advantage to use two brushes at the same time as the work can be done much more easily. If the person has opportunity the hair should be sunned quite frequently.

Dandruff.—A cause for early grayness of the hair and for its falling out is dandruff. The following remedies will be found to be beneficial: Precipitated sulphur, one drachm; salicylic acid, four grains; white vaseline to make three ounces. Rub in every night until the dandruff has disappeared. Massage in bay rum every other night for three or four weeks, when the scalp should be entirely free from all tendency to dandruff. Another lotion is made as follows: Resorcin, eight grains; castor oil, one fluid ounce; alcohol, three fluid ounces; Peru balsam, five grains. Rub in the scalp daily until good effects appear.

Falling Hair.—What is needed to prevent this trouble is to enliven the roots of the hair and to encourage active growth. Some use a wash of alternate hot and cold water, with no soap, two or three times a week, for stimulating the hair. The following tonic is useful: Sulphate of quinine, one and one-half drachm; tincture of cantharides, two drachms; alcohol, two ounces; glycerine, one-half ounce; oil of anise, twelve drops; witch-hazel, eight ounces. Shake well before using. Use rubbing in thoroughly every night for two weeks, and at the end of this period on the next day wash the hair thoroughly in a solution of green soap. Omit the application for four days and then resume it for another two weeks. Continue this process until the hair is glossy and becomes firm. It is best to use a medicine dropper inserted next to the scalp, then massage in the tonic so that the hair is not saturated with the liquid.

Gray Hair.—When the hair turns gray, it does not mean that the health of the hair is in any way impaired, but simply that the tiny color producing glands have gone out of business. Gray hair previous to middle age can often be restored to its natural coloring by improved health and hair culture, and especially when it is the result of nervousness or poor health. In more advanced years, however, there is nothing that can restore color after the hair turns gray or white.

The Teeth.—The care of the teeth has received attention elsewhere and the reader is referred to this subject in the index.

The Eyes.—For slight eye troubles, bathing in salt water or milk diluted one-half with water will give relief. When there is inflammation of the eyes, bathing with boric acid solution is better than with salt water. For ths purpose an eye cup is desirable, a fresh solution being used for each eye. If the eyes are strained and sensitive, however, they should be protected from the light, perhaps by a bandage, and in troublesome cases it is well to consult a specialist. Exercises for the eyes consist in moving and stretching them as far as they can be moved upward and downward ten times, far over to each side ten times in each instance, and then ten times around in a circle, reversing the circular motion ten times. Follow this by tightly closing the eyelids ten times, then opening them ten times, as wide as you can stretch them. This will strengthen the adjacent muscles and increase the circulation in the eye. One's entire state of mind and also the condition of health are accurately reflected by the eyes, and all health-building measures are of importance in beautifying these organs.

Eyelashes and Eyebrows.—The eyelashes may be improved by a gentle pulling, thus stimulating their growth and giving them strength. The same is true of the eyebrow. Olive oil or vaseline applied to the latter will also promote their growth.

Care of the Ears.—Cleanliness is the chief consideration in the care of the ears. A warning must be given against cleaning the ears with hairpins and other hard objects in order to remove the accumulation of wax. Unless this is excessive it need cause no concern. The presence of a certain amount of wax is natural and has a protective purpose. The only thing that should be inserted in the ear is a small, twisted wad of absorbent cotton, such as mothers use in cleaning a young baby's nose. Nothing harder than this should be inserted in the ear except by a physician.

Care of the Hands.—Cleanliness is of first importance in having well-preserved hands; but soap should not be used excessively since pure lemon juice is more effective for cleansing the hands and is especially valuable for softening the skin. But when the hands are soiled with grease, the use of a mild soap will be necessary, always rinsing well afterwards with cold water.

Chapped Hands.—Chapping is caused by exposure of a damp skin to cold air or a wind. A thorough cleansing should be the first step in overcoming the condition of chapped hands. A thorough washing with a mixture of warm water, castile soap and corn meal is valuable, afterwards rubbing in a little olive oil, vaseline or cocoa butter. It is a custom with many to wear long rubber gloves when the hands are employed in work requiring the use of hot water. An effective treatment for chapped hands is a mixture of glycerine and rose water, equal parts, and a few drops of benzoin added. Rub this into the hands well after washing them with warm water just before going to bed. A moderate use of cold cream or of honey and almond cream will give relief. Almond cream is also a good preventive if used when retiring. Camphor ice or a white lipstick is good for chapped lips, and glycerine, one ounce; rose water, three ounces; carbolic acid, ten drops, compose a lotion which has proved of value.

Oatmeal Water is splendid for washing the hands. Oatmeal boiled in water may be strained, using the liquid as a wash.

Whitening the Hands.—A good preparation for whitening the hands is a mixture of equal parts of cocoa butter, refined wax and oil of sweet almonds, first heating, then stirring until cool and applying to the hands before retiring. Bran mixed with buttermilk to make a thick paste may be rubbed upon the hands at night, after which put on loose gloves and let them remain until morning. Another satisfactory preparation for whitening the hands is a mixture of equal parts of glycerine, rose water and lemon juice. First wash the hands with oatmeal or almond meal water and then apply this mixture.

Red Hands.—Redness of the hands may be due to several causes, but is often an indication of poor circulation, which sometimes is due to tight clothing. Holding the hands upward will relieve this condition and also relieve the swollen condition of the veins. For permanent results, exercise, massage and keeping the feet warm will be effective. Washing in cold water is the best temporary remedy. In massaging use a rich development cream up to the elbow, working with the fingertips on the hand and the palm upon the arm. Use a molding motion upon the back and palm and a rotary motion elsewhere. Work in the cream well and put on large gloves for the night. This will encourage circulation and should make an improvement.

Book XVII

PHYSICAL CULTURE AND BODY BUILDING

PART 1.

EXERCISE NECESSARY TO HEALTH.

Why Exercise is Beneficial.—There is a general impression in many circles that exercise or physical culture is merely a means of developing muscular strength. There is also a general impression that in this age brain is more important than brawn. Consequently, those who view the subject of body-building from this narrow viewpoint are not likely to take physical culture seriously.

The great truth is that physical culture is not simply a means of building strong muscles, for it is also a means of improving health and building vitality. Even brain work requires energy. Physical culture is a means of building not only muscular vigor but functional strength, organic strength and nerve strength. Muscular power in many cases is desirable for its own sake, but for the average man and for the average women exercise is chiefly valuable not for the sake of strength but for the sake of health. Let this point be made clear, with all possible emphasis.

The basis of every healthy life is activity. There can be no such thing as health without muscular action. Man is fundamentally an animal. He is much more than this, but this he is first of all, and should be a perfect representative of animal life. In the days of the cave man the ordinary requirements of life were such as to keep one physically active and strong. The preservation of life depended upon strong limbs, a clear eye, agility and speed of movement, with perfect control of every muscle of the body. Men in the stone age did not need physical culture. They lived it all the time. But civilized man, with his sedentary occupations and limited physical activities needs special forms of exercise to keep him strong and vital.

Brains are indispensable these days, but bodily strength is also necessary to stand the stress and nerve-strain of modern life. The man of to-day should represent a combination of brains and brawn, for never was life so trying as at present. Never was a strong constitution more necessary.

Importance of the Muscular System.—You could not speak, you could not open your eyes, you could not adjust or focus the sight, you could not breathe, your heart could not beat, you could not digest your food, you could not laugh or cry, you could not walk, you could not dress, you could not even crook a finger without muscular action. The muscles should be regarded as organs of the body just the same as any other organ, for they are organs of movement.

Exercise is absolutely essential to health because of the physiological relation of the muscular system to the rest of the body. For over two-fifths of the bulk of a normal body is made up of muscular tissue. The nutrition of such a large part of the body is therefore an important matter. Most of the food we eat is consumed by the muscles, and most of the heat in the body is produced by them. It is apparent that to neglect the muscular system, therefore, means to derange the harmonious balance of all bodily functions. Exercise is beneficial because of its influence upon the appetite through the increased demand for food. It is beneficial because of its influence in promoting a vigorous and active circulation of the blood. It stimulates functional activity in all the internal organs. It causes deep breathing, thereby promoting health of the lungs, increasing the supply of oxygen upon which all life depends, and facilitating the removal of carbonic acid gas. Furthermore, it stimulates the elimination of all wastes and poisons through the kidneys and the pores of the skin. Muscular stagnation means stagnation in all of these functions as well, and under such conditons it is not possible to maintain a high degree of health.

Physiological Effects of Exercise.—Muscular activity brings about increased metabolism or cell-activity. There is a breaking down or wearing out of the cell structures, resulting in the formation of waste products and in the subsequent rebuilding of new cells. Strength may be increased and the muscular structures themselves developed by daily and persistent exercise which involves these changes. The formation of new cells is stimulated by the demand for greater strength in the muscles, and it is because of this fact that body building becomes an easy possibility. In fact, the muscles represent the only tissues in the body which we can influence directly. All other structures must be improved indirectly through the influence of exercise and other measures in the improvement of the blood and the promotion of the general health.

The first and most important effect of exercise is accelerated circulation. The breaking down of the cells brings about a demand for oxygen and new building material, and also the necessity for the removal of the carbonic acid and other waste products formed. Therefore, the heart is compelled to beat more rapidly, pumping the blood through the arteries and finally through the capillaries in such a way that the oxygen is supplied to every minute part and the waste materials are taken up by the blood-stream and carried to the channels of elimination. This means increased breathing, increased action of the kidneys and increased perspiration. Under conditions of physical stagnation the removal of wastes is sluggish and imperfect. The active and vigorous circulation induced by exercise, on the other hand, tends to cleanse all of the bodily structures. A sufficient amount of exercise, therefore, means a condition of internal cleanliness. Exercise for those who are strong enough to take it is the most valuable of all blood purifying measures.

Fatigue.—What we call fatigue is simply the result of an accumulation of the waste products resulting from metabolism. If not removed they will poison the body and make life impossible. When they have accumulated, even to a limited degree, these waste-poisons produce a stiffened and weakened condition of the muscles in which the latter are incapable of normal action. The relief of this condition necessarily involves the removal of these fatigue-poisons. This is ordinarily accomplished during sleep and rest, although it is hastened by massage, hot water bathing and other measures that increase the circulation and hasten elimination.

These fatigue-poisons are produced not only by muscular effort but by brain work or the functioning of any other of the organs of the body. Under conditions of physical inactivity and sluggish functioning these wastes accumulate. Under such circumstances the first effect of exercise, by increasing the circulation, is to remove these poisons and thereby bring about a sense of refreshment. It is in this way that a moderate amount of active exercise is refreshing in its effects. It is possible, however, to carry the exercise to such a point that the muscular work itself involves such increased production of fatigue-poisons that the refreshing effect of the exercise is lost and one feels fatigued. For this reason exercise for constitutional purposes should not be carried too far.

Exercise for the Brain Worker.—It will be seen from what has just been said that mental work is productive of fatigue, or the accumulation of waste-poisons. That is why one feels exhausted at the end of a day of brain work. Exercise in such a case should be taken at five or six o'clock in the afternoon as a means of relief and refreshment. The increased circulation will enable one to sweep these wastes out of his system and to clear his brain. So long as your exercise is enjoyable it is productive of this result, but as soon as it becomes laborious and you lose the sense of pleasure you may understand that it is time to stop.

Classification of Exercise.—While practically all exercises have certain results in common, yet various forms of exercise are especially adapted for definite purposes. Certain types, for instances, are chiefly effective for purposes of *muscular development.* Other forms of exercise will be particularly valuable for *strengthening the internal organs.* We may term these *organic exercises. Corrective exercises* form a department of physical culture, the purpose of which is to overcome bodily defects and special weaknesses in various parts of the body. To a large extent it is the corrective influence of many systems of exercise that give them their greatest value. Finally, we may consider what may be termed *constitutional exercise,* the chief purpose of which is not to develop the muscular system, but to build vitality and improve the general health.

ORGANIC EXERCISE.

Strong Muscles or Strong Organs.—We have said that the first purpose of physical culture should be health and vitality rather than mere muscular strength. We need both, but the internal strength is the more important. There was a time when the thought of physical culture was associated chiefly with the biceps, the large, two-headed muscle of the upper arm. The physical training conceptions of that day had to do merely with strong arms and legs, and, to a certain extent, the ability to lift weights. Physical culture was something for the wrestler and boxer. But that day has gone by. Physical culture is now a means of health-building for the professional or business man, or anyone else, and is concerned chiefly with nervous energy and internal strength. The man of to-day wants strong organs most of all. He cares little about his biceps, except as it may be a means of promoting the general circulation and influencing the internal organs.

Strength of Back, Chest and Abdomen.—For the above reasons any system of physical culture intended for the average man rather than for one specializing in athletics should consist chiefly of exercise for strengthening the trunk of the body and the internal vital organs. The exercises which we are illustrating are practically all of this type. An elaborate system of exercises for the arms and legs is of little value compared to a few simplified movements for strengthening the back, improving the chest and giving one firm abdominal walls. The exercises illustrated have been carefully selected for this purpose. It does not matter so much what exercise one takes so long as it accomplishes results. One may do as many exercises as he pleases, but such movements as have been illustrated are of the very greatest importance.

Exercises that affect the region of the back, sides, chest and stomach have a direct effect upon the internal organs, not only because the increased circulation in these muscles means an increased blood supply to the internal parts adjacent to them, but also because movements of the trunk of the body have the effect of compressing, stretching and otherwise moving the internal parts to a considerable extent, thus promoting functional activity. No one can be absolutely healthy without more or less activity of this kind, whether in the form of work or exercise. Exercises involving the region of the stomach and abdomen are of particular importance for the sake of firm abdominal walls and a general condition of strength and vigor throughout all these parts.

Breathing Exercises.—Voluntary deep breathing is a commendable form of organic exercise that directly affects the lungs and in that way influences the entire body. In civilization, and especially indoors, men and women neglect to breathe deeply. Inactivity and sedentary life are responsible for a degree of shallow breathing that is conducive to pale faces and lack of energy. One cannot live without oxygen and the more oxygen he inhales the better the condition of his blood. Deeper breathing also means the more perfect elimination of carbonic acid gas.

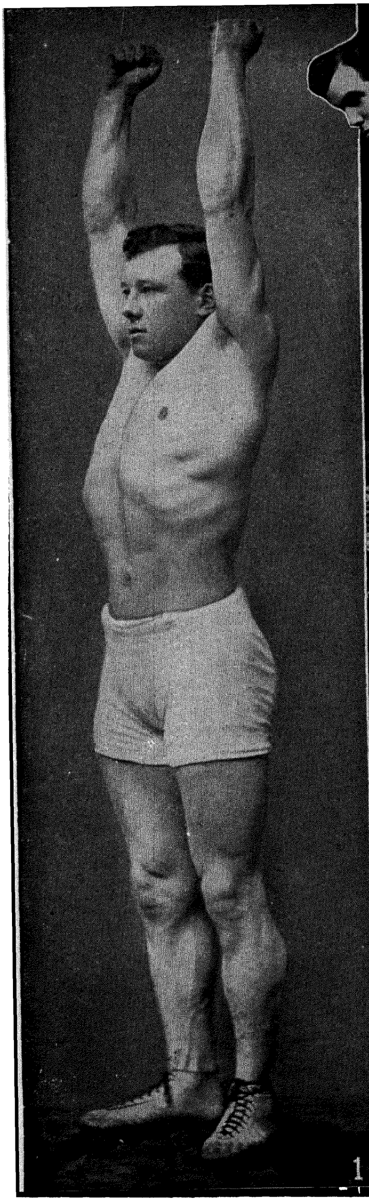
Now, ordinary muscular exercise is at the same time the most perfect form of deep breathing exercise. Under such conditions deep breathing is spontaneous. The lungs automatically adapt themselves to the oxygen requirements of the system. Muscular effort creates a demand for oxygen, or what one may call a condition of oxygen-hunger. Prolonged muscular activity, therefore, insures a perfect lung development. Under such conditons one does not need to think of special deep breathing exercises. Wild animals do not need to be taught deep breathing.

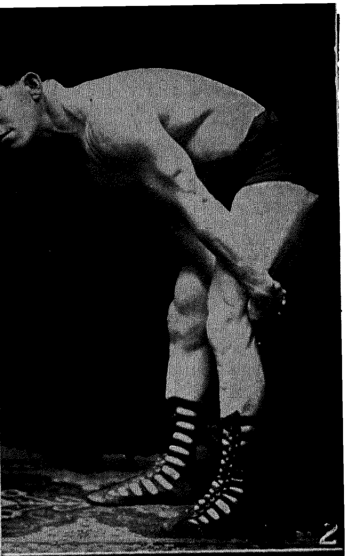
Diaphragmatic Breathing.—One whose occupation keeps him confined for a large part of the day, however, should practice voluntary deep breathing frequently. This should take the form of diaphragmatic or so-called abdominal breathing. Chest breathing is unnatural except under conditions of extreme muscular exertion, as in running or wrestling. If one requires a tremendous amount of oxygen, chest breathing is instinctively resorted to temporarily to supply the demand. Under ordinary conditions, however, the natural method of breathing involves chiefly the expansion of the body at the waist line and in the region of the abdomen. This is because the diaphragm, during the process of inhaling the breath, presses downward in such a way as to cause the expansion of the body below it. The diaphragm is a large, flat muscular structure which forms a partition between the thoracic cavity and the abdominal cavity. It serves as a floor for the heart and lungs and as a ceiling for the stomach and other functional organs lying underneath. If you take an erect position and inhale a breath, drawing it down to the lower part of the lungs in the proper manner, you will find that the expansion is at and below the waist line, with perhaps a little expansion of the floating ribs. It is remarkable how much air can be inhaled and exhaled without expanding the upper chest. This is a form of deep breathing to be practiced as often as you can think of it. Inhale only through the nose. Exhalation may be either through the nose or mouth, but preferably through the nose.

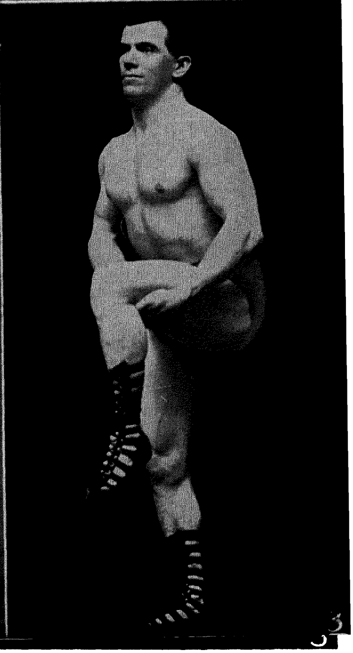
While it was thought years ago that abdominal breathing was natural for men yet it was assumed somehow that chest breathing was the only natural method for women. The error of this assumption is now well understood. Chest breathing among women is found to be only the artificial result of corset wearing and tight lacing. If there is sufficient freedom at the waist line and below, women naturally breathe in the same manner as men.

The breath is never entirely exhaled. There is always a residue in the lungs and air passages. The fresh air inhaled is therefore only mixed with this residue of "dead air" in the lungs. In order that deep breathing may be as effective as possible, therefore, and the supply of oxygen as great as possible, it is well to exhale as much as one can before inhaling. In this way the new supply in the lungs is more nearly perfect.

Breathing exercises are valuable the first thing in the morning. If one feels "more tired than when he went to bed" it is often because of an accumulation of carbonic acid due to shallow breathing when asleep. Deep breathing exercise will overcome this condition quickly. A little







1. Stretching the arms vigorously high above the head, an exercise especially good for the spine. 2. First position in a vigorous exercise for the back. From this position, resisting with the leg, straighten up to the position shown in Figure 3, pulling the leg upward. Repeat several times with each leg.

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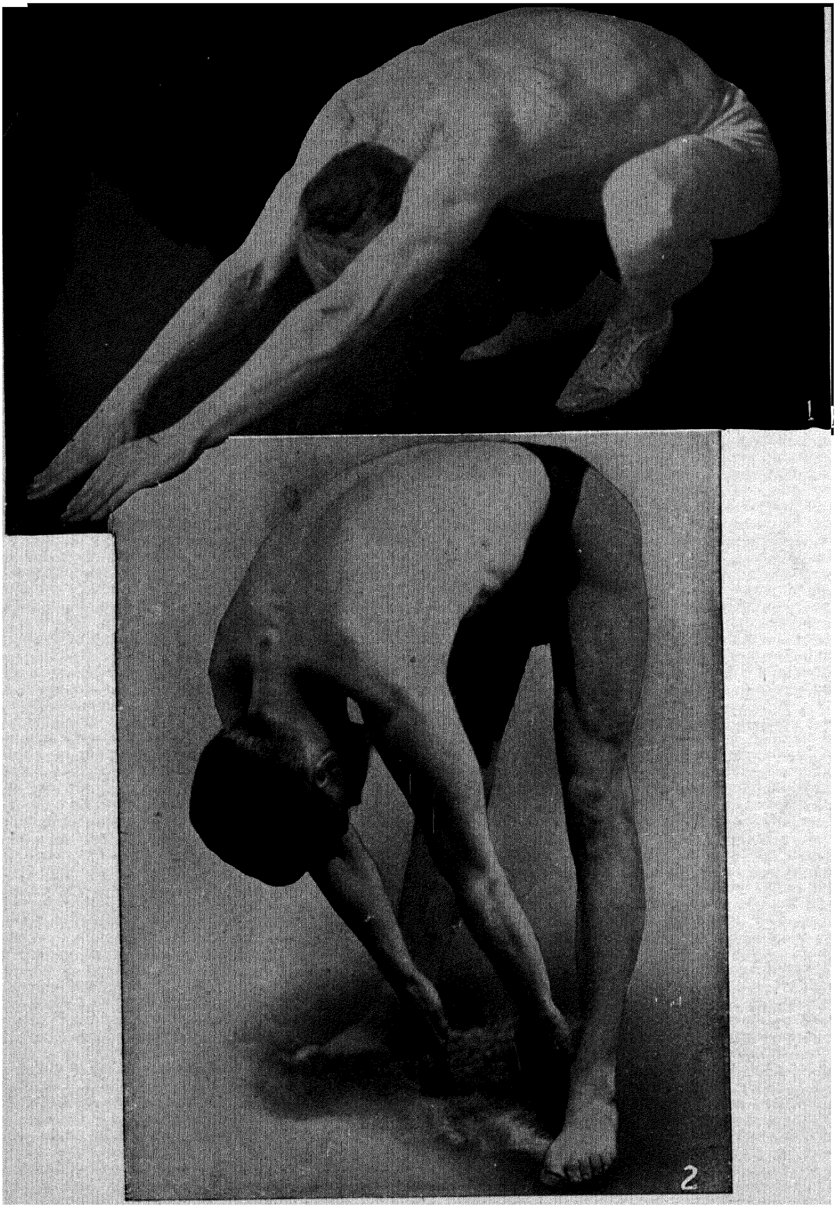

Two good back exercises. 1. Squat low down and stretch the arms vigorously far forward, touching the floor at a point as far as you can possibly reach. 2. First standing erect, with arms high above the head, and feet apart, swing down and touch the floor between the feet and at a point as far back as possible.

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active exercise and a cold bath, by stimulating respiration, will also quickly bring a sense of refreshment.

CORRECTIVE EXERCISE.

Remedying Bodily Defects.—In two respects systematic exercise has a great advantage over play or athletics as a means of physical development. Active open air pastimes, while always recommended, do not necessarily mean a perfect development of all parts of the body. Exercise, however, properly designed and systematized, will bring about symmetrical development, for each part of the body will be employed in such a way that there are no weak parts. And in the second place, special exercises may be used for corrective purposes where there are bodily defects. Many athletes may be found who are well trained in some specialty, but are nevertheless one-sided in development.

Such conditons as flat chest, drooping or "round" shoulders, spinal curvature, a pouchy abdomen, head hanging or thrust forward, flat foot, "chicken breast," and other similar defects, may be either partially or entirely remedied by appropriate exercise.

To a large extent, however, ordinary development exercises of the best type are corrective in their influence. In other words, so far as the trunk of the body is concerned corrective and development exercises are to a large extent identical. The subject should be understood, however, so that intelligent selection may be made of those exercises which in each individual case are most suited to one's requirements. All exercises which strengthen the back, and especially stretching and bending movements, are corrective of spinal curvature. All exercises which bring the shoulders back and improve the carriage of the head have a corrective influence upon the chest. In both flat-chest and "chicken breast," chest expansion exercises and chest breathing exercises are advisable, though proper posture in such a case is most important of all. All exercises which tend to strengthen the stomach and abdominal muscles, and particularly those which also promote improved posture, will tend to overcome a pouchy or sagging condition of the abdomen. All neck exercises will strengthen that part and improve the carriage of the head. Flat-foot or weakness of the ankles may be corrected by systematic exercise and especially by the wearing of moccasins or sandals, going barefoot, and the practice of "toeing-in" when walking. Exercises for gripping with the toes, for placing the weight on the outside edge of the foot, for arching the foot and for deep-knee-bending with the toes slightly turned in will be valuable in flat-foot and other foot troubles. The strengthening of any of these parts will naturally be corrective, but by selection of special exercises suited to each case wonderful results can be secured.

Influence of Correct Posture.—Where there is any occasion for the use of corrective exercise special study should be given to the question of bodily posture. This is always important, even where there is no physical defect or weakness. Correct posture really means a properly balanced and erect condition of the spine. Everything else depends upon this fundamental necessity. An erect spine naturally involves a normal position of the shoulders, chest and abdomen. The chest, under such conditions, is in an active position, well raised and expanded so as to give room for heart and lungs. The shoulders are fairly well back and the abdomen somewhat retracted. The extreme military position, with the abdomen far drawn in and the chest thrown far forward, is neither necessary nor desirable. It is essential, however, that a comfortably erect position be maintained. By holding the head fairly well back this position is easily assumed.

The Spinal Column in Correct Posture.—We have said that good posture is chiefly a question of an erect spine. The human spine is unique in the animal world because man is the only animal who naturally stands erect. This has required a certain variation in the evolution of the spine peculiar to the human race. Particularly this variation involves the natural curves in the spine, of which there are three, the more important for our present consideration being the lumbar curve, which is responsible for the conspicuous arching of the back at the waist line. It is true that these curves help to give resiliency, but fundamentally they are the direct result of our erect posture. This arching of the back, therefore, is an inevitable feature of an erect position. When you slump forward, with shoulders drooping and chest flat, the arch in the back tends to disappear. But when you draw yourself up to your full height, with chest elevated and expanded and head thrown back, the arch in the back becomes pronounced. When you hear reference made to a "straight back," the idea conveyed should be that of square shoulders and erect posture, inasmuch as the spine is never really straight in the strict sense when the body is properly carried.

Exercises for Correct Carriage.—Therefore if you see to it that the back is arched in this way you can depend upon having a correct carriage. As a means of securing this at any time there are three extremely simple sary in order properly to enjoy constitutional exercises and to influence the internal organs in the manner suggested. The more perfect the external muscular system, the more satisfactorily can one strengthen the internal organism.

There is no need to strive for Herculean strength, but a natural, normal development is essential. One should have a body of which he need not be ashamed. Symmetrical and harmonious outlines usually mean health as well as muscle. Remember also that any exercise which will strengthen the muscles will at the same time mean stronger bones, stronger ligaments and tendons, more healthy cartilages and a more firm, clean and healthy condition of every structure of the body. In overcoming resistance not only are the muscles strengthened but there is a certain amount of stress and strain on the tendons, the bones, the ligaments and all other parts involved. Even the arteries and veins are affected. The contraction of the muscles means pressure upon the blood vessels, thereby directly affecting the circulation. In the limbs, also, the movements tend to stretch and to shorten the arteries, according to the character of each movement. Accordingly, while advocating organic and constitutional exercise we do not belittle the value of muscular development.

Exercise versus Work.—It is often said that many men and women secure sufficient exercise in the course of their work. This involves a fundamental fallacy inasmuch as certain muscles are overworked, in most instances, while other muscles are unemployed and therefore undeveloped. Work usually means a one-sided development, sometimes with exhaustion of those muscles which are employed. In some cases, as in writers' cramp, telegraphers' cramp and other occupational neuroses, there is exhaustion of the nerve centres. Most "work" is of a character to stiffen and fatigue one, but without building any special degree of strength.

Exercise, therefore, is of just as much value to the manual worker as to anyone else. Some forms of work, such as chopping wood and pitching hay, are splendid exercise. Others, ploughing, for instance, are purely stiffening in their results. After ploughing all day some quick, light exercise will be refreshing and strengthening. One should always exercise those muscles not employed in his work.

Limitations of Athletics.—Athletic games are to be recommended for those physically suited to them. They will not, however, take the place of scientific physical training where one is in need of symmetrical development. Specializing in athletics frequently overworks certain muscles while neglecting others, just as is the case with many forms of work.

All-around athletics should be preferred. In all cases the young man before going into any athletic competition should prepare himself by systematic physical training to build up a normal development and strengthen any weak parts.

Light versus Heavy Exercise.—There is much controversy as to the relative value of light and heavy exercise. Both are valuable for special purposes. For one who is strong very light exercise is practically no exercise at all. He will require some form of exertion which gives resistance to his powerful muscles. Feats of great strength are perfectly natural where one is sufficiently strong so that there is no strain upon the vital organs in performing them. One who is weak and undeveloped, however, cannot attempt heavy exercise and should commence with light movements. As he gains in strength he may use exercises involving more resistance. It requires the expenditure of strength to build strength, and if he hopes to become very strong it will be necessary to use ever-increasing resistance. He should not, however, force himself too much. The theory that one can gain the strength of a Hercules by means of light exercise is without foundation. Pay no attention to the mail-order expert who tells you that you can have "muscles like mine" through five minutes of light calisthenic work, according to "his system." The facts are that the mail-order expert gained his amazing development from hours of weight lifting each day.

"Calisthenics" are valuable for all-around purposes, and in class work are suited to the needs of the average individual. In advanced physical culture, however, they are no longer sufficiently vigorous. Furthermore, the ordinary calisthenic "drill" contains a number of exercises for arms and legs which are of limited value as compared to such movements of the trunk of the body as are illustrated in this department of this work.

Weight Lifting.—If one wishes to become a professional "strong man" and has exceptional vitality, with a powerful frame to begin with, weight lifting is the one and only means of securing the greatest possible strength. It is not, however, advisable for the average man. There is no real objection to weight lifting for one who is already strong if he does not overdo it. One should be sure that he has a strong heart before using weights. It is possible by practicing speed exercises to maintain some pliability and speed in the muscles while handling weights, but it is nevertheless true that weight lifting has a tendency to promote stiffness of the muscles and a more or less muscle-bound condition.

Dumb-bells.—Dumb-bells of light weight were popular one or two generations ago, but are not now much used. A dumb-bell drill is really a calisthenic drill in which these light weights are held in the hands for the purpose of giving some resistance and to make the movements more effective. If you practice calisthenics, dumb-bells are as useful for this purpose as ever, but they are inclined to make one slow even though they help to build strength. One can use a pair of flat-irons for the same purpose.

Tensing Exercise.—This is a form of exercise, much advocated and taught by mail-order experts, which consists simply of a method of hardening or "tensing" the muscles. One muscle or set of muscles is used to resist the contraction of the opposing muscle or set of muscles. For the arm, for instance, the flexor or biceps is used to resist the extensor or triceps muscles. High-sounding, meaningless terms, such as "physiological exercise" or "concentration exercise" are applied to this form of exercise by mail-order instructors. Tensing exercises, however, while somewhat effective, are not to be recommended because of their muscle-binding and stiffening tendencies. They call for an unnatural use of the muscles. The muscles were intended for purposes of movement and not to resist each other. Exercises involving bodily movement, or exercises against external resistance are infinitely superior to any of these freak "systems."

Stretching Exercise.—Stretching is a natural and spontaneous form of muscular action. When systematized stretching gives a fairly satisfactory method of exercise. It can never, however, take the place of active movement exercises. It cannot influence the heart or functional system to the same extent as active games and real muscular exertion. One may advantageously practice a few minutes of stretching for all parts of the body the first thing in the morning, but should not depend upon this limited form of exercise for all of his physical requirements.

Complete and Incomplete Movements.—It should be said, however, that a certain amount of stretching should form a part of all systematic exercise. All exercise movements should be as "complete" as possible, in order to stretch the muscles and other tissues. In our ordinary, everyday work our movements are usually limited in scope. We do not extend the arm fully or flex it fully. We do not bend as far to either side as we can nor stretch the arms as high above the head as we can. Special exercises, therefore, should extend the scope of our movements to their natural limit. In extending the arm in exercise it should be straightened absolutely. In bending at the elbow it should be flexed as far as it will go.

In bending the body we should bend as far as we can in each direction, and in raising the arms above the head we should raise them as high as we can stretch. This principle should be earnestly kept in mind, in order to keep the muscles supple and elastic, and in order to promote the circulation in the tendons, joints, ligaments and other structures apart from the muscles. The back, for instance, should be vigorously stretched in all bending exercises so as to influence the cartilages of the spine, thus keeping them elastic and healthy. It is, in part, the stretching of all sections of the body in systematized exercise that gives it its unusual value, and to neglect this feature is to fail to get the best results.

Gymnasium and Apparatus Work.—Practically all apparatus work in the gymnasium can be recommended as an effective form of exercise. Too much emphasis need not be placed upon apparatus work because thousands of people do not have the opportunity of visiting a gynasium regularly, and therefore should depend upon such exercises in the home as we have illustrated. But if a gymnasium is convenient the various forms of apparatus can be recommended not only for strengthening the body, and especially the arms, but because such apparatus helps to lend interest to the work of physical training. It is an excellent plan, especially where there is a family of children and a convenient yard for the purpose, to instal a little home-made apparatus. A horizontal bar, parallel bars, a vaulting horse and a trapeze or flying rings will all be useful in this way.

Owing to the elevated character of most forms of apparatus, such as the horizontal bar, parallel bars and rings, it may be said that exercise of this kind bears a certain relation to the natural life and activities of prehistoric man, and especially to those of our alleged ape-like ancestors, who lived in the trees. In other words, exercise of this type is strictly natural. Apparatus work is usually most effective for improving the shoulders, chest and arms, although to a certain extent valuable for the other parts of the body as well.

Rapidity of Exercise.—The question of the speed at which exercise should be carried on is frequently brought up. Should certain movements be performed rapidly or slowly? This depends upon the character of the exercise and upon the individual. As a general thing, movements should be fairly active in character and of a speed which one can best enjoy. Very great speed calls for more energy. Very slow movements are stiffening in their results, also fatiguing. As a general thing, exercises performed with a "swing" and a fair degree of speed are suggested. The quality of rhythm is also helpful.

Stimulating Exercise.—Fast movements have a stimulating effect upon the nervous system. They wake one up. They call for more energy than slow movements and they arouse the energies of the body more thoroughly. They are even mentally stimulating if not carried to the point of too much fatigue. Also they are refreshing. Slow movements are sedative in character. If one wishes to sleep soundly a few very slow movements, or walking very slowly, would make him feel tired and in a condition to sleep. A brisk walk, however, is mentally stimulating and all fast exercises are energizing. If engaged in any work of a monotonous, slow and stiffening character, then a couple of minutes of very fast exercise will be found refreshing. If stiffened from a slow walk of ten miles, a quick run will arouse an active circulation and make one feel fresh and energetic.

Relaxation and Contraction.—The best results in exercise of any kind will be secured from a policy of alternate contraction and relaxation of the muscles. In other words, the state of tension or contraction should not be prolonged, but momentary in character. There should be a moment of contraction and then a brief interval of relaxation, and then another moment of contraction. During the brief interval of relaxation a renewed blood supply is allowed to flow into the capillaries in the muscles, and in that way the exercise can be continued without discomfort and with the very best results. Prolonged stress or tension of the muscles interferes with the circulation by reason of the continued pressure on the blood vessels, and may result in a stiffened or cramped condition.

Occupational Exercise.—The character of the exercise best suited to various men and women will depend largely upon the nature of their occupation. One who does hard physical work will not need strenuous exercise but rather activity of a quick, light character. One whose occupation involves sitting down all day will naturally require some vigorous exertion. He needs real exercise, and if possessing much vitality and a strong frame he may benefit most by exercise of a decidedly strength-building character.

Exercise in Relation to Bodily Weight.—Undoubtedly those who are thin will require different methods of training from those who carry an excess of flesh. The thin man usually needs to conserve his vitality and must carefully avoid over-exertion. This is especially true if he is of a nervous temperament. What he needs is a small amount of exercise, but of a muscle-building character. Men are thin not simply through lack of fat but through lack of muscle. They need strength-building exercise for enlarging the muscles, but only a small amount of it because they cannot spare too much energy. They should not, however, strain themselves. Also they need a certain amount of walking for constitutional purposes, but should not do any running.

On the other hand, the man who is over-weight usually has sufficiently large muscles already, in combination with his fat. Reference is made to the ordinary case of superfluous flesh, not those cases in which fat is a disease, for such cases need a doctor. Many stout men are powerful—that is to say, "awfully strong for a minute." They do not need strength-building exercise. What they need is fast, active exercise such as will build endurance. Their activity should be light, but continuous enough to burn up the fatty tissue. There should be no strain, but the exercise should be a matter of hours.

At the same time those who are over-weight must depend largely upon diet to secure a satisfactory reduction, especially eliminating the fat-forming foods, or in other words, the carbohydrates and fats. If they will eliminate bread from the diet together with cereals, rice, potatoes and other starchy food, and also sugar and other sweets, it is usually a simple matter to reduce weight.

Age and Exercise.—Age is usually the period of decreasing activity, but to a certain extent it is due to decreased activity. Age is not merely a matter of years; it is a bodily condition. Some men are old at thirty, others are still young in body and mind at seventy. To maintain youth is largely a matter of keeping physically active as well as observing other rules of health. Exercise is, therefore, just as important in advancing years as in youth.

Exercise for men above sixty years need not be so active or strenuous as that for young men, but it should be of a character to maintain suppleness, and especially it should be conducive to an erect bearing. What we have said about the importance of bodily posture applies especially in advancing years. It is found that healthy men in old age often possess remarkable endurance. Many records for long distance walking have been made by men between sixty-five and seventy-five years of age. Walking, golf, hill climbing and activities of a similar character are very highly to be commended. Appropriate exercise is one of the most effective means of avoiding the hardening of the arteries which is commonly associated with the declining years of life.

Exercise and the Bath.—A cold bath may be used in the morning as a tonic and as a means of improved circulation, but it should follow the morning exercise. A cold bath is only valuable when one can enjoy it and recuperate promptly with warmth. If one feels chilly or nervous, or finds himself trembling afterwards it is weakening and harmful.

Success with cold bathing and the ability to recuperate depend largely upon being thoroughly warm before taking the bath. For this reason also it is better to take the bath in a warm room. One recuperates more readily. Exercise preceding the bath has the effect of thoroughly warming the body so that one may enjoy it and benefit from it. Never attempt a cold bath when already chilled, when the hands and feet are cold or when the skin takes the form of "goose flesh."

The shorter the bath the better. Simply stay in the cold water for a moment, whether a plunge or shower is used. If perspiring freely from exercise this is especially important. After the bath one should, in such case, use a warm sweater or bath-robe so that he may continue to perspire somewhat and cool off only gradually. One should not cool off too quickly or stay in a cold bath too long when perspiring. Under such conditions also it is a good plan to use a warm shower first and to wind up with a momentary cold shower. if all shower bath conveniences are available. Only one or two hot baths with soap a week are required for purposes of cleanliness, and such hot baths should always be followed with a cold shower or cold sponge.

Cold baths have a pronounced effect upon the circulation and are a tonic of great value for those with whom they agree. One of limited vitality, however, should be careful.

Air Baths and Sun Baths.—Air baths are of distinct value for their tonic effect on the nerves and for promoting the functions of the skin in general. Clothing is an artificial form of protection, tending to smother the skin and interfere with the elimination of waste matter through the pores. To take an air bath, simply remove the clothing in a comfortably warm room and allow the air to come in contact with the surface of the body. Air baths are conducive to good health and circulation, but it is always important that the hands and feet should be kept warm through good circulation.

Sun baths are stimulating and energizing, if properly taken. The sun is the source of all life and energy upon the earth, and the sun's rays directly stimulate the bodily metabolism. A sun bath and air bath may be combined, if convenient. Care should be taken by those of fair, light skins not to carry them too far, and especially in midsummer in the middle of the day. The vertical or nearly vertical rays of the sun have a chemical effect which, although stimulating for a short time, become destructive to the nerve-protoplasm if continued too long in the case of those of blonde or unpigmented skins. Those of dark complexions can endure much more sunshine. The best time for a sun bath in summer is early or late in the day, though in winter one may take a sun bath at noon. There is no doubt that everyone requires a certain amount of sunshine the year around as a means of stimulating the formation of red blood cells and energizing the system generally. If care is taken to avoid the chemical action of the vertical rays, sun baths will be of great value in building vitality and strength.

Clothing and Sunshine.—Light colored clothing may generally be recommended as a means of permitting light to reach the skin. Gray and tan are excellent and serviceable colors for this reason. If engaged in farm work or otherwise too much exposed to the direct rays of the sun in the summer, some protection from the light may be desirable. Light colored fabrics are cool, but admit the light. Black or dark colored fabrics absorb the heat, but shut out the light. In a tropical climate or under the vertical rays of the sun, where protection from both light and heat are desired, one should wear black or dark underclothing to shut out the light, and white or light colored outside clothing to reflect the heat and keep cool. Hats should be white or light colored on top, with a dark lining. Arabs and others exposed to much sunshine wear white turbans and light colored clothing to keep cool.

Friction Rubs.—Supplementing air baths and sun baths, friction of the skin is of great value in promoting its functional activity. A coarse Turkish towel is excellent for this purpose, although soft brushes may be used. If the skin is tender and sensitive one may even use the palms of the hands. Five or ten minutes of this friction of the skin, briskly rubbing every part of the body, will more than repay one through the improved texture of the skin itself and the healthful influence of this treatment upon the body in general.

PHYSICAL CULTURE

PART II.

PHYSICAL DEVELOPMENT FOR WOMEN.

Strength and Womanhood.—It is a mistake to suppose that bodily strength is a possession to be cultivated exclusively by the male sex. The burdens naturally placed upon womanhood are such that strength and vitality are, if anything, even more desirable for women than for men.

Great muscular strength is not desired. But a certain degree of strength, according with a natural and normal bodily development, is absolutely essential. The biological peculiarities of each sex are to be considered. Anthropological studies have shown that men are naturally better suited for exertions of a violent and strenuous character, but that in work or any form of activity requiring moderate exertion only, women on the average have better powers of endurance. It need not be said that women have more vitality, though there may be reason for thinking so, but it is undoubtedly true that they naturally have remarkable powers of endurance when at their best. They are not fitted muscularly for extremes of heavy lifting, nor for hunting and war, and so it is only natural that exercise of that character and games which simulate these activities should be limited to men. But within the natural limits of a woman's strength exercise and development are fully as important as in the case of men, and activities that promote grace and elasticity rather than strength are particularly commended.

Bodily Development.—Every woman desires a good carriage. Every woman desires a good figure. A normal bodily development, with its lines of strength and grace, indicates vitality and a conditon of physical wholesomeness. It is impossible to carry the body properly or to enjoy the possession of a good figure without a satisfactory muscular development. It is quite true that women naturally are supplied with slightly more fatty tissue than men, but the real outlines of the body, nevertheless, are determined by the fundamental muscular structure. Without it, the whole body lacks character. Fat, without an underlying muscular formation, means shapelessness. The beauty, contour and shapely lines of healthy womanhood are determined almost entirely by the muscular development. The external layer of fat simply serves to fill in and make smooth the various parts.

Masculine or Feminine Outlines.—It has sometimes been suggested by uninformed and prejudiced writers that physical exercise tends to give a woman masculine outlines. This contention, however, is not borne out by the facts, inasmuch as the structure of a woman's body differs fundamentally from that of a man. No amount of exercise, no matter how far she may carry her physical training, can possibly give a woman the angular, lumpy and conspicuous muscular outlines of the over-trained male athlete. Humorous writers have sometimes referred to professional "strong men" as giving the appearance of having a large number of tennis balls concealed under the skin. This type of physical development, however, cannot possibly be secured by women, inasmuch as their muscles partake of a long, smooth character, productive of softer outlines.

Exercise for women, instead of making them masculine in appearance, only serves to accentuate their feminine qualities by reason of promoting better health. Their feminine attributes are more distinctly emphasized. The greater the degree of physical development in each sex the more perfectly will the secondary sex characteristics of each be made manifest. The more vitality that each possesses the more perfectly will they be differentiated in these respects.

The Right Kind of Exercise.—To a large extent all consideration applying to exercise in general, and especially to exercise for correctiv purposes, will apply very forcibly in the case of women. It is not stron arms and legs that are most desired. On the contrary, physical trainin for women should be chiefly directed to building up strength of the trunk of the body. Even more than men women need strong backs, good chest and particularly a strong and firm condition of the abdominal region. T a large extent, therefore, the exercises we are illustrating are of a typ to bring about increased strength in the trunk of the body. Aside fro these special exercises all activities that involve grace and suppleness ar particularly commendable.

Housework as a Form of Exercise.—Thousands of women are und the impression that they get plenty of exercise in the form of housewor

Unfortunately, they are mistaken. Housework is not exercise. If it were, nearly all women would be models of physical perfection. Housework requires a certain amount of activity and by special study certain forms of housework can be employed as exercise by doing it energetically and by modifying ordinary movements in such a way as to stretch the body and improve the posture. As usually performed, however, housework involves the use of only a limited number of muscles. Most of the activities in the home are of a nature to bend the back, cramp the chest, pull the shoulders forward and in other ways to operate against proper poise and the active use of the entire muscular system.

The houseworker probably needs exercise of the right kind even more than any one else. Housework has a fatiguing effect upon the body but does not refresh and strengthen like exercise. Houseworkers need special movements for raising and expanding the chest, pulling the shoulders back, straightening the back, bringing the head back and up, and in other ways for strengthening and improving the trunk of the body as a whole.

Poise and Carriage.—All that we have said in the section on "Physical Culture and Body Building" and about the importance of correct posture applies with special emphasis in the case of women, not only for the sake of health but for the sake of personal attractiveness and good appearance. The elusive quality which we often term "style" is not a question of clothing but a question of bearing. It is entirely a question of proper carriage. A woman may be gowned in the most expensive fabrics, but if she does not carry herself like a queen she has no "style." On the other hand, a woman with a well developed body, full of vitality and energy, may wear the most economical and simple kind of a dress, and yet by her grace of carriage and physical poise will give the suggestion of "style."

It is this quality that physical culture, and physical culture only, can develop in women. This quality may be the possession of every woman who will make the effort to perfect herself physically and to secure an upright carriage of the body. Posture alone may be insufficient, inasmuch as one might stand erect, but stiffly. Style and good carriage involve not only an erect position, but a certain freedom and grace of movement that can only be secured by proper muscular co-ordination, as developed through exercise. One must have control of her physical organism in such a way that every movement is free and easy. Active play during girlhood tends to give one this grace and muscular control. Dancing helps to develop it, but physical culture is the most valuable of all measures for improving one in this particular respect.

Why Women Wear Corsets.—There is no question that the primary purpose of the corset was to supply in an artificial way the erect bearing which would naturally be the expression of vitality and a normal, vigorous bodily development. It may appear that many women at the present day wear the corset as a means of bodily support, and come to depend upon it for such support, but the corset when it was first worn was designed to make the figure more attractive. Even to-day many women continue to wear corsets because of the feeling that they would "look like a fright" without them. Considering their undeveloped physical condition it is quite true that they would be unattractive in their natural state. The corset tends to hold one erect, and the persistence with which corset wearing has been practiced throughout many centuries is largely the manifestation of the normal instinct of women to make themselves attractive and presentable. It is an attempt to supply by artificial means what should be supplied as a result of health and vigor. A prominent and protruding abdomen, largely as a result of improper carriage, and associated with drooping shoulders and a flat-chested condition, is an intolerable outrage to the æsthetic sense of every healthy woman. The corset affords a way out of the difficulty.

Are Corsets Unnecessary.—Books and articles without end have been written in denunciation of the corset. There is no question of the harm done in many cases through tight lacing and the wearing of improper corsets. It need not be said, however, that corsets are in all cases injurious if they are well designed and properly fitted. The great difficulty, however, is that women depend upon the corset for their "shape." Many of them feel that they have no shape at all without this contrivance. Instead of being fitted to the corset, however, as is the case in most instances, the corset should be selected to fit the figure, and first of all every woman should have a figure of her own to which the corset should conform. Instead of being shapeless without her corset she should be shapely, and this is entirely a matter of physical development.

The torso of a woman, like that of a man, is normally supplied with a muscular structure which, when properly developed, really provides a natural corset for her. It is a corset of vigorous muscles which will keep her body firm and strong and beautiful. If these muscles are properly developed she will need no corset in order to give her shape. In present fashions in dress, and particularly in the wearing of separate waists and skirts, involving tight waist bands, something in the nature of a girdle or corset may be required for comfort and for proper adjustment of the clothing, but no one should be compelled to wear a corset just to "give her a figure." She should depend upon the natural corset of the muscles of her waist line and abdomen. If these muscles are weakened and allowed to degenerate with an accumulation of fatty tissue, and particularly if the carriage of the body is faulty, then she will be truly shapeless and unpresentable without artificial support.

A strong back and an erect posture, however, should by all means be cultivated by women. Erect posture will mean a full and well-rounded chest and a retracted abdomen. Furthermore, some of the exercises illustrated in this section will be of special value for strengthening the muscles in the region of the abdomen and waist line in the manner desired.

Weaknesses of Women.—There is no question that the weak point in the case of many women is the pelvic region. The displacements of the female organs are the cause of great suffering and contribute to various nervous disturbances. A prolapsed or otherwise displaced condition of these organs is usually the result of a weakened condition of the ligaments involved and also of the adjacent muscles, organs and structures generally. By toning up and building strength in all these parts it is frequently a very simple matter to overcome difficulties of this type. Faulty carriage also has a great deal to do with weaknesses of this kind and should require special attention. All exercises, however, which tend to build strength of the external abdominal muscles will likewise favorably affect the pelvic organs, together with the digestive and other functional organs. Particularly commendable are those movements for strengthening the abdomen which may be practiced while lying down. In the case of prolapsed organs excessive exertion or muscular strain while standing may in some cases aggravate the trouble.

As a special means of relief in the case of prolapsus of the female organs and also as a means of building strength, reclining exercises performed on an inclined plane with the hips and feet higher than the level of the head, will be advantageous. In this case the force of gravitation tends to restore these organs to their normal position. One may take a large ironing board, placing one end of it upon the side of the bed, the lower end on the floor, and while lying with the feet elevated upon this board she may execute simple exercises for the legs, raising them to the perpendicular, flexing the knees against the chest and devising other movements that will bring into play the abdominal muscles.

A still more effective type of exercise as a means of relief in such conditons is one which we have illustrated, in which the body is raised to a practically upside down position. This can be executed while lying in bed. If you have a brass or iron bedstead, take hold of the rods at the head of the bed with your hands, raise the legs first to a perpendicular position, and then stretching them still further upward, raise the hips and back until the weight of the body is practically supported by the shoulders, and the torso as well as the legs are held for a few moments in an upside down position. Study the illustrations carefully.

Apart from special exercises of this type the all-round building of strength and an improvement in the circulation, together with good posture and freedom from the constriction of corsets or skirt-bands which compress the lower part of the body, will be very effective by way of avoiding and also remedying many of the tormenting weaknesses of women.

Exercise for Constipation.—In connection with weaknesses of women the necessity for overcoming any tendencies toward constipation assumes special importance. All exercises that tend to strengthen the abdomen will be very effective in this direction, while brisk walking, rope skipping, dancing, tennis and active exercise generally, if one is strong enough, will be helpful. Deep abdominal massage, using a circular movement in the direction of the hands of a clock, will be valuable. In connection with such exercise and massage, dietetic measures will be necessary. One should drink freely of water and use plenty of fruit and green vegetables. White bread is the most common cause of constipation and should be avoided, together with cakes, cookies, crackers, crullers and white flour products generally. Instead, whole wheat bread or graham bread should be used. Bran is especially good, either used in muffins or mixed with one's cereal. All whole wheat or whole grain breakfast foods are satisfactory. Cheese, rice, tapioca, spaghetti and other starchy foods are likewise constipating and should be avoided. Fresh milk is sometimes conducive to constipation, and in a serious case it would be better to use buttermilk or fermented milk instead.

By following these suggestions on diet strictly, together with sufficient exercise and water drinking, stubborn cases of constipation may usually be overcome without the help of cathartic treatment. In a serious case an enema will usually be found more satisfactory than a cathartic.

Exercise During Pregnancy.—If ever strength and health are desirable in the case of a woman, it is in connection with the trials of maternity. Physical weakness, under such circumstances, is responsible for much suffering and difficulty of recuperation. It is a well-known fact that the women of savage races experience very little of the weakness and hardship in recuperating from childbirth that is prevalent in civilized communities. There is also some evidence that, to a certain extent, painlessness in childbirth may be enjoyed as a result of a normal, vigorous and healthy physical condition. If pain cannot be entirely avoided, at least in many cases it may be greatly lessened by proper physical preparation for maternity, in which the building of strength is an important factor. And in all cases exercise enables one to recuperate much more quickly and to avoid permanent weakening results.

The prospective mother should, above all things, get plenty of sleep and outdoor air. The inclination to remain indoors during this period "for fear of being seen" is little short of criminal in its results, inasmuch as it bears upon the health and vitality of the unborn child, as well as impairing the health of the mother. Nutrition is a most important matter at this time, and the lack of fresh air, by interfering with the appetite, is also indirectly detrimental in this way.

Walking is one of the most valuable of all forms of exercise during this period because of its vitality building influence. It should be made the special duty of every prospective mother to take a long walk some time each day.

Special exercises, however, are important for strengthening the abdominal walls and for promoting the health and vigor of all the bodily structure concerned. In these exercises the aim should be elasticity and suppleness rather than excessive strength. In other words, these exercises should not be carried so far as to produce an abnormal muscular development or a condition of muscular rigidity. It is best, accordingly, to employ active exercise of this type during the first three or four months of pregnancy, and thereafter to use less vigorous movements involving this part of the body, but particularly to depend upon daily long walks. Motoring and other pastimes which take one out of doors are particularly suggested. In the latter months of pregnancy special care should be taken to avoid any strain. Stretching or bending exercises should then be taken with caution, and only to the point at which they are easy and comfortable to execute.

Bust Development.—The question of improving the bust is one of special interest in the case of large numbers of women. A normal bust development is invariably associated with a condition of vitality and perfect womanhood. In many cases a source of complaint is found in a lack of development and in other cases in excessive development, with the desire to reduce the bust. In either case, good results can usually be secured by physical culture methods.

Exercises which involve the muscles of the upper chest have a decided effect in improving the firmness and contour of the breasts. It cannot be said that in all cases exercise will increase the size of the bust, but in all cases it will increase their firmness and beauty. Where there is a tendency to droop this firmness has everything to do with their character and contour.

The increased size of the bust, when it is lacking or defective, must first of all depend upon improved nutrition and the development of vitality. The glandular structure depends upon the general health and active circulation, and to bring about an improvement in this respect all possible measures that affect the general health must be considered. In many cases a general gain in health is necessary, requiring more sleep, better nutrition through appropriate foods, freedom from mental strain or worry, freedom from overwork and particularly as much outdoor life as possible.

The bathing of the breast with cold water may be particularly suggested. Massage, under such conditions, is likewise valuable, but it should never take the form of pulling or stroking downward because this will tend to increase still further any sagging or drooping of the parts. Massage strokes should take an upward direction.

It should be said that there is a widespread, popular misconception as to what should be the normal size of the bust. Under natural conditions and the most perfect health the bust should not be too large. It is only under conditions of maternity and approaching maternity that these glands are particularly enlarged. At other times they should be of only moderate size, and it is only under such conditions that the most perfect contour can be maintained. When the breasts are too large it is almost impossible to prevent their drooping or hanging. A study of works of art, both antique and modern will show one very quickly that the perfect bust is not excessive in size.

Apart from exercises for the muscles of the chest, the appearance of the bust depends very large upon proper carriage and the development of the chest. A good bust is impossible in connection with a flat-chested condition. If the chest is round, full and well developed, and the carriage erect in such a way that the chest is properly raised, a bust of moderate size will assume its true proportions of harmonious outline and symmetry. One cannot, therefore, pay too much attention to improving the conditon of the chest as a whole.

The reduction of the bust when too large is a much more difficult matter in many cases, and if one is over-weight it will be necessary to employ special diet and reducing methods for the entire body. Massage is somewhat dangerous for bust reduction; diet and exercise are the only safe means to reduce. The exercises already mentioned for bringing into play the muscles of the upper chest are of even more importance, if anything, as a means of removing the superfluous fat. These should be practiced at least two or three times each day. The bathing of the parts with cold water is likewise especially valuable for improving the circulation, oxidizing the adipose tissue and for improving their firmness. See *Reduction*, Index.

The Thin Woman.—It is not generally recognized that a lack of flesh upon the part of women is to a large extent the result of a lack of physical development. It is quite true that it frequently means poor nutrition and a lack of vitality, but nutrition is improved in part by exercise and the better appetite that comes with exercise and open-air life.

At the same time, a thin arm means an undeveloped arm. A body not properly filled out means one lacking in general muscular development. A thin woman, often of a nervous temperament, cannot afford to waste her energy in an excess of exercise, but she should persistently and systematically exercise every part of the body by a little really energetic exercise each day. By using each and every muscle only a little bit, but with sufficient effort to prove to Nature the need of greater strength, Nature will respond by building strength and developing the muscles. As a woman builds up her muscular structures she will enjoy improved functional tone and her flesh will be rounded out in the manner that is natural to her when in good health. Physical stagnation is just as detrimental to a woman as to a man.

Recreational Exercises.—It is true that outdoor recreations cannot take the place of systematic movements in improving the body, but they have a marked constitutional effect and are also helpful in the case of women for developing grace, agility and muscular control.

Dancing is a form of activity particularly well suited to the physical requirements of women. Although not necessarily an outdoor exercise, it is best practiced in an open-air pavilion. The ordinary social dances are valuable, though to a less extent than folk-dances and fancy dances of various kinds. Toe dancing alone is somewhat artificial and unnatural, although even that is not really harmful in any way, and would be helpful.

Tennis is well suited to women and many of them become fully as expert as the best male players. It is an active game, but without any special strain for those in condition to play it. Rope-skipping may be made very interesting with a study of fancy steps, and is valuable for women, although where there is prolapsus of the pelvic organs one should strengthen these parts before attempting rope-skipping.

Swimming is an ideal exercise for women inasmuch as it is particularly well suited to their bodily structure. Fencing is another active and enjoyable competitive exercise, conducive to grace and muscular control. Other games and sports may be recommended for those to whom they naturally appeal. Other sports are described elsewhere, Book XIX.

For Women Who Worry.—Worry may often be overcome by relaxation exercises or some active and stimulating form of exercise, such as tennis, rope-skipping, running or dancing. Such activity will take one out of the mental rut of her worry. By overcoming physical depression one also overcomes the mental depression associated with it. By arousing an active circulation and stimulating all the bodily forces, one takes an entirely different view of things. By promoting deep breathing and by thus changing the blue blood into red blood the "blues" will naturally fade away. There is no other possible means of overcoming worry that is so effective as stimulating exercise, although where there is any liver trouble, dyspepsia or constipation as a fundamental cause of this mental condition, proper attention should be given to these disorders.

Relaxation Exercises.—For nervous persons generally and especially for women of nervous temperament, relaxation exercises are of great value. They enable one to overcome that condition of nervous tension which is, in many cases, such a waste of vitality. Learn to relax. One may train herself to "let go" of the tense muscles, and in that way relax the nerves. We have voluntary control of our muscles and through their use we may, to a large extent, control our nerves and mental states.

The most convenient relaxing exercises are those performed lying on a soft bed, with a good spring. Raise one foot at a time ten or twelve inches, hold it for a moment and then relax, letting it drop absolutely limp upon the bed. Repeat this ten times. Then try with both legs together. With the arms at the sides raise them a few inches and let them drop seemingly lifeless. Raise the head and shoulders two or three inches and then let them drop back relaxed. Next with the weight on the shoulders and feet raise the hips and back three or four inches from the bed, hold the position for a moment and then let the body back limply. Try this at first five, then ten times. It may bounce if properly relaxed. Soon you will readily learn to relax the muscles voluntarily, and by overcoming the tightness or muscular tension you will learn at the same time to relax the nerves. Those who have difficulty in going to sleep should practice these relaxing exercises on retiring each night.

Similar relaxation movements can be performed while standing, by raising one arm or one leg at a time and then letting it drop limp, swinging loosely at the side. Another excellent movement is to let the head suddenly drop limp upon the chest, with arms swinging loosely. For another, hold the arms extended in front, hands hanging limp from the wrists, and then shake the hands loosely regularly ten times.

Cold Baths for Women.—The effect of cold bathing in the case of women is exactly the same as in the case of men, and what we have said in the section on physical culture in regard to bathing, air baths, sun baths and friction rubbing will likewise apply to women, although in the matter of cold bathing women of limited strength should be especially careful. It is. of course, advisable to avoid cold bathing during the monthly periods, and to be careful about exercise at such times unless very. strong

Clothing.—The dress of women has such an important influence upon physical activity and health that a word on the subject is necessary We have already referred to the influence of the corset, though it should be said that when avoiding a corset the wearing of tight skirt-bands and the weight of heavy skirts may be even more serious. Any form of clothing which permits free bodily movement may be suggested, and one-piece gowns, house dresses and other forms of apparel which are supported from the shoulders should be much used on general principles. Hose supporters, if possible, should be suspended from the shoulders rather than from the waist. Skirts should be as light as possible, fairly full and fairly short so as to give the greatest freedom in walking. Knickers, growing in favor, deserve consideration for this purpose.

A gymnasium suit, being naturally intended to provide for the greatest freedom of movement, would likewise be especially valuable for purposes of housework in the privacy of the home. Such a plan is to be highly recommended and would undoubtedly mean improved health and a more perfect bodily development.

Probably the greatest offense against the body in modern clothing is found in our conventional footwear, especially that of women. The only perfect foot covering would be a moccasin or sandal, that gives the muscles of the human foot the same freedom that it enjoys when bare. Going barefooted will cure most foot troubles. Sandals are also suggested for this purpose. Shoes, as nearly as possible, should approach the outlines of the human foot. There should be plenty of room for the toes, and the big toe should occupy a position following the straight inside line of the foot. Shoes should fit snug around the instep or shank, but with room to double the toes inside of the shoe. Square-toed shoes are not necessary if the straight inside line is followed and there is plenty of room for the toes. The ordinary pointed shoe, however, is built on very bad lines.

The addition of an artificial heel to the shoe is undoubtedly one of the greatest crimes of the shoemaker. Nature would have supplied us with a natural high heel if it were desirable. The high heel places a strain upon the entire foot, and by throwing the body out of balance it places a strain upon the spine, and to some extent upon the pelvic organs. High heels are a common source of nervous disturbance. The flat heels found in tennis shoes and in the so-called "spring-heeled" shoes of school children are to be recommended.

Extremes of Dress Reform.—For sensible attire extremes in dress reform are not necessary if only the comfort and freedom of the body are permitted in the clothing worn. It is not essential for women to adopt the dress of men. It is perfectly natural that the clothing of the two sexes should be absolutely distinctive. Soft, clinging fabrics are especially suited to the feminine nature and bodily requirements, while strong, firm fabrics and more severe or formal outlines are suited to the masculine nature and bodily conformation. The secondary sex characteristics of men and women are so distinctive that it is only natural that the clothing of the two sexes should harmonize with these differences. Masculine attire for women, therefore, has only the sanction of fashion, but sensible and comfortable dress is a matter that directly affects the health of everyone.

PHYSICAL CULTURE

PART III.

PHYSICAL TRAINING FOR CHILDREN.

Strength in Childhood.—All mothers and fathers wish their children to be strong and healthy. Many youngsters are naturally so. It is partly a question of being born with a vigorous constitution, and this depends largely upon the health and vitality of the parents.

But only taking into consideration the children after they are here, and especially those who are born not exceptionally rugged, is it possible to improve their physical make-up? Can vital resistance, red-blooded health and all-around strength be cultivated in the infant and the child? Assuredly. The child with a naturally strong constitution undoubtedly has an advantage over those less favored by nature, but by proper methods the latter may also attain a satisfactory degree of strength and health.

To a large extent the physical improvement of children is a matter of proper food, fresh air, sufficient sleep, appropriate clothing and other factors tending to build vitality and promote health. Not one of these can be ignored. Probably the first in importance is the question of nutrition, and without doubt the greatest of all mistakes are to be noted in this quarter. But there are also mistakes enough in connection with these other requirements to prevent the satisfactory growth and development of many children.

Children need all the sleep they can get. Up to five years of age, if possible, they should sleep two or three hours each afternoon. They need almost continuous fresh air. They should practically live out of doors the year round. Their diet should be plain, wholesome and nourishing, with an abundance of milk, with no food allowed between meals to spoil the appetite, and especially with no cheap candy to overtax the liver, spoil the teeth and interfere generally with good nutrition. All these influences are of the greatest importance, but in this particular place we are concerned chiefly with the strengthening of the children through play and exercise.

Play Versus Exercise.—Most children, if unhampered by the artificial restrictions of civilized life, would secure sufficient exercise from the spontaneous activity of play. Play is the one great and universal means of strength building and education. Young animals educate themselves through play. In the human race play serves as a means of both physical and mental education. The child first develops its mind through the use of its muscles. Continuous activity is the one invariable characteristic of all healthy children, and it may also be said that under many conditions play is the very best form of physical training. At least this is true of those children who are naturally strong and energetic.

But play has certain limitations where bodily defects of any kind are concerned and where the children are inclined to be frail. Under such conditions, special attention will be required. Systematic and persistent exercises directly affecting the weakened parts will bring about a condition of symmetry and harmonious strength, and this result can be gained in no other way.

Outdoor Play.—We may say that those children who are so full of energy that they are constantly on the move and simply cannot keep still, will usually need no special attention in the way of physical culture. You cannot do better than to turn them outdoors into a nice, grassy yard, where they will have full freedom to wrestle and run, to push and pull, to roll and romp and play all kinds of games that may appeal to them. Depend upon it, such children will take care of themselves in the matter of strength and healthy growth. All they need is good food, plenty of sleep, outdoor play-space and such clothing as will not interfere with their bodily activities in any way.

It is important that girls should be sensibly dressed so that they can play absolutely the same type of games as the boys. Dainty and pretty clothing will do very well for Sunday, but for the play hours the clothing of girls as well as of boys should be serviceable in color, texture and construction. Little girls, by way of underclothing, should wear bloomers which will give them full freedom to climb trees, if desired, or to run, wrestle and romp as much as they choose.

The confinement of city life is almost a crime against childhood. If possible, children should be raised in the country. Even the best ventilation cannot make indoor rooms as satisfactory as the open air. The outdoor world and the sunshine are absolutely essential. A nursery or play-room in the house may be advantageous in extraordinarily stormy weather, but in the case of ordinary snow and rain the children should be provided with suitable clothing and be allowed to stay out of doors. When raining they may wear appropriate rubber coats, rubber boots and helmets such as will permit them to run around out in the open just the same as in clear weather. They may enjoy it even more.

If the little folks must play indoors in the winter-time, then give them a room well provided with windows, open the windows wide and let them put on their sweaters, overcoats, gaiters, mittens and caps so that they will be provided for the cold air just about the same as if out of doors. Every nursery and playroom should be as nearly as possible an outdoor playroom, so that the children will have good health, good appetites and beautiful rosy cheeks. Much emphasis is here placed on this particular question of fresh air because it is, if anything, even more important than any method of exercise. Furthermore, fresh air is so conducive to energy that the children will naturally turn to active play. And the more noise they make, the better. It indicates a healthy, normal childhood.

But if open air life is of such value in the case of rugged and vigorous children, it is even more important where delicate children are concerned. The latter should not be sent to school too early but should be kept out of doors and, if possible, arrangements should be made on any convenient porch, balcony or roof, or possibly in a tent, for outdoor sleeping.

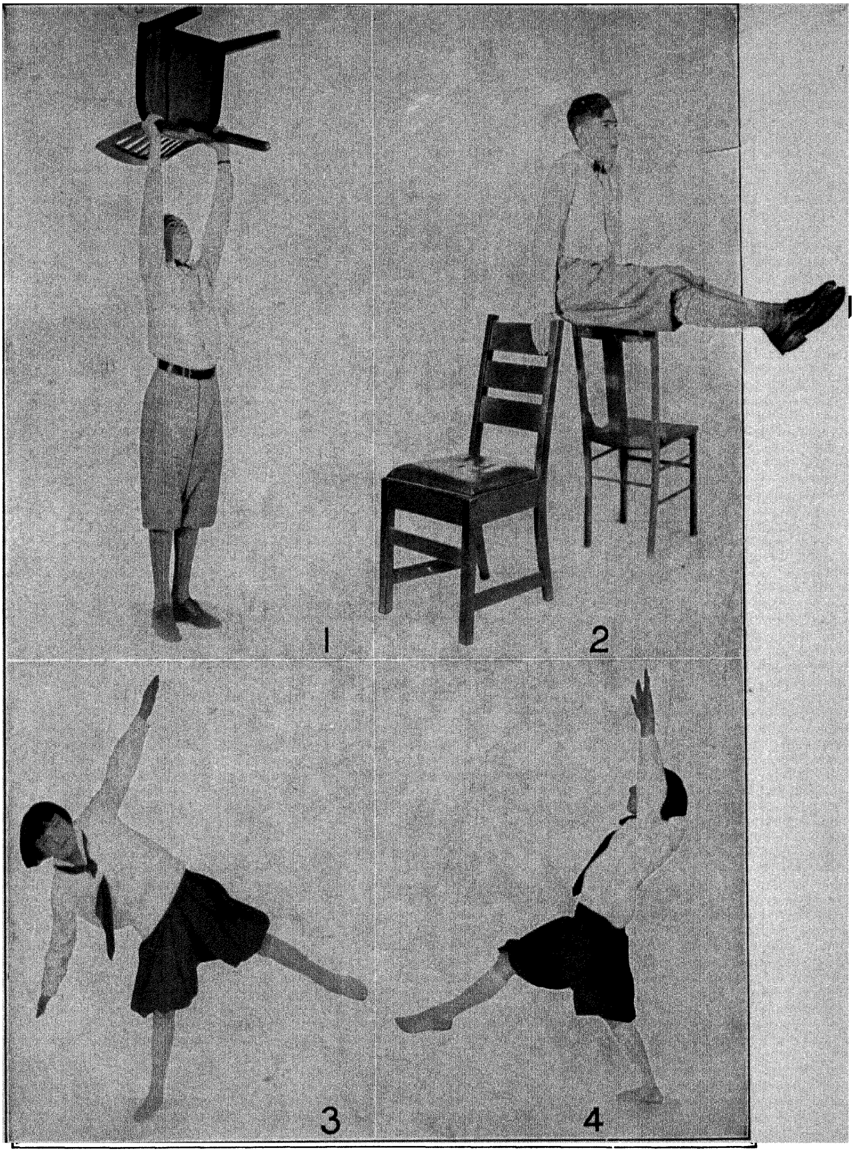
What Children Need Exercise?—The children who particularly require physical training are those who are thin, pale and generally delicate. The child who plays only with blocks and picture cards, who prefers to sit on a rug rather than to run about, who never makes any noise and whom his parents regard as a very, very "good" little boy, will need special attention. Those who are always running, wrestling and fighting will get along well enough, but the quiet child and especially the nervous child should be encouraged in the direction of active play and in all forms of outdoor life. He should not be exhausted by a too strenuous program, but he should be given enough exercise to make him muscularly tired, to make him sleep better, to improve his appetite and in that way to bring about a revolutionary change for the better in his entire physical make-up.

Children who are of an excitable nature or who suffer from hysterical tendencies should be discouraged in mental pastimes and kept out of doors. Having a mental temperament, these children usually learn very quickly at school and one can afford to let them start their school life later than the average child. Give them a chance to build up a vigorous physique.

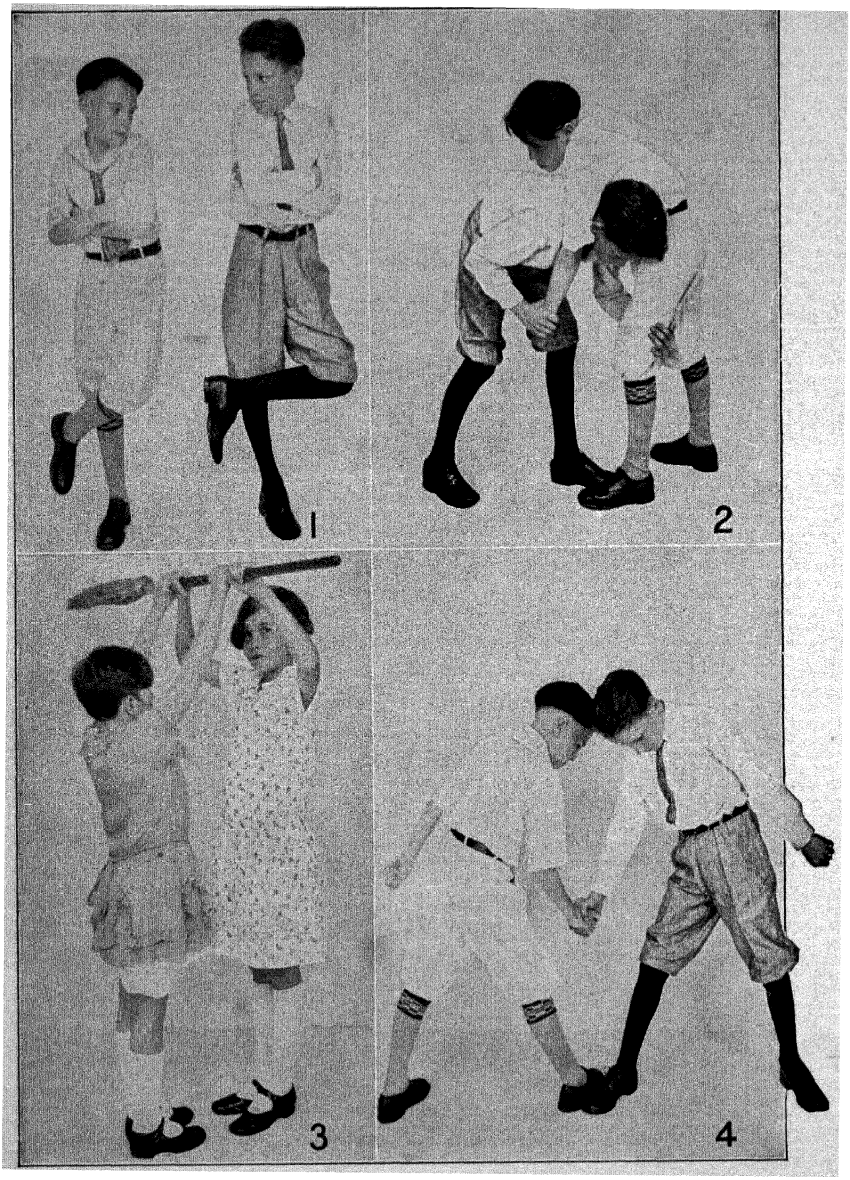
Those having weak eyes or eye defects should be discouraged in pastimes involving eye strain, such as playing with pictures and books. The eyes of young children are really suited to fairly large objects at a little distance. They should have large balls to play with, shovels, digging implements and other things that do not call for close concentration of sight. In fact, this is true of all children. Kindergarten work, because frequently trying on the eyes, is of doubtful value. All such children should have their eyes thoroughly and carefully examined, and when necessary glasses should be used to remove any eye strain until the eyes become stronger. The eyes invariably improve with better general health.

Adenoids are usually developed from a lack of outdoor air and active play. When once established they should be removed as soon as discovered, but they may be prevented just as swollen tonsils may frequently be prevented by open air activity. Mouth breathing should be avoided. Defective hearing is often catarrhal in origin, and the building up of the general health will usually mean an improvement in the hearing.

Corrective Exercise.—Bodily defects can usually be remedied far more successfully in childhood than in later life by special and systematic exercise. All gymnastic work is somewhat corrective in character, though to get the best results this work should be individualized, depending upon the personal requirements of each child. For round shoulders, spinal curvature and conditions in which one shoulder is lower than the other, stretching and body bending exercises are effective. Stretching the arms high above the head, swinging by the hands from a horizontal bar and twisting the body at the waist should be diligently practiced. If one shoulder is lower than the other, that shoulder should be stretched upward repeatedly. Let the child place a pencil mark on the wall as high as he can reach. Let him each day strive to stretch still higher to beat his previous mark. Wrestling and all physical exercises for the back will likewise tend to improve this condition. Bodily posture, both standing and sitting, is most important. The erect position can best be secured



An ordinary chair is a satisfactory means of exercise for children. 1) Holding a chair as illustrated, various motions may be made that are very beneficial. Swing the chair over, bending sidewise, one side and then the other; bending at the waist swing so it almost touches the floor; swing back from the perpendicular as far as possible, counting with each movement, 1—2, 1—2, etc. 2) Swing up from the vertical position slowly, and repeat five times. 3) Swinging sidewise, slowly and steadily, arms extended, gives good general exercise. 4) This exercise is very similar to the last and is easily understood from the illustration; the method is to balance on each foot alternately, bringing the arms up and down with the change of position.



Competitive games and exercises particularly appeal to children, and should be encouraged. 1) "Rooster fight." With arms folded, and hopping on one foot, each tries to "bump" the other over, or make him put down the other foot. 2) A typical wrestling hold. Wrestling is an ideal exercise for naturally rugged children. 3) Testing the grip. Let each grip the broomstick tightly, and then try to make it turn in the other's hands as it is brought down between them. 4) Hand wrestling is a clean and delightful sport. Taking this position, each boy tries to pull, push or jerk the other off his balance. To move either foot or touch the floor means a fall.

by stretching the arms high, also by bringing the arms back, thus pulling the shoulders backward. This exercise will likewise raise and expand the chest, overcoming any flat-chested tendency.

Where the abdominal muscles are weak, and especially where there is constipation and digestive weakness, bending exercises and those which double the legs against the body will be useful. Let the child lie on his back, hold his feet steady, and then let him raise himself to a sitting position without the use of his hands. Also, while hanging by the hands, let him raise the legs to a horizontal position.

In any tendency to bow-legs or knock-knees all strengthening exercises for the legs will be useful, particularly deep-knee-bending, or squatting and rising. Mechanical pressure or rubbing, either outside or inside the knee, as required, may have some effect in childhood, although these defects cannot be altered at or after maturity. Good food has much to do with it, and milk should be used freely.

For weak ankles or flat-foot there is nothing like going barefoot. If a child seems to favor one leg—that is, stand mostly on the other foot—he may have some weakness in this direction. Sandals and moccasins are just about as good as going barefoot, but all possible exercise for the legs and feet should be encouraged to strengthen the weakened parts. Skating, dancing, rope-skipping and running are very effective if one can practice them. Foot exercises, such as rising high on the toes and on the heels, bending the feet inwards and outwards and also circular movements of the feet are remediable in such cases.

In the same way weak hands and wrists may be strengthened by exercises with a broomstick, using especially a competitive game in which two children try to pull or twist the stick away from each other.

A thin neck usually goes with an undeveloped and delicate condition of body generally, and all kinds of development exercises are necessary together with special movements for the neck itself. The latter should consist of bending the head far backward and forward and far to each side, as well as twisting or turning the head. By way of advanced exercises, after some strength is developed, the weight of the body should be partly supported by the head while lying on the back and also in a position face downward. In the latter exercise first get down on hands and knees, place the head on the floor, then lift the hands and if possible the knees. A good strong neck is always associated with a condition of vitality.

How Much Exercise.—There should be no forcing of the child's growth and no excess in exercise. Do not strive for feats of strength or to make a circus performer of the youngster. Such "stunts" as throwing the child high in the air, tossing him up for somersaults and dangerous feats of any kind should be avoided. Exercise should be intended merely for a normal development and healthy growth. Beyond this, training is not advisable. When the child shows the least lack of pleasure in the exercise it is probably time to quit.

How Children Should Exercise.—So far as possible, even systematic or special training should take the form of play. It should be made pleasurable, and if the parent will take an interest so as to make it as much "fun" as possible there will be no difficulty in keeping the child's interest. A great many exercises can be employed in the form of stunts or tricks, and where there are several children they can compete with each other in doing them. Who can stretch the higher? Who can make a better backward bend? Who can balance longest on one foot in certain stretching feats? Who can expand his chest the most? Who can raise his back the highest when lying on his back with the weight of the body on the feet and head? The competitive or play spirit in all such exercises will help greatly.

Competitive Games.—There is a great variety of competitive games and exercises that may be especially suggested for all-around development. Hand wrestling is ideal for children. Taking a firm position, with feet well apart, let them "shake hands" with the right hand and then see who can pull, push or jerk the other out of balance so as to make him move his feet or touch the floor with his other hand or any part of the body. This is splendid exercise. After five "falls" change off to the left hand. Ordinary wrestling is a superb exercise for boys if practiced on the grass. It will be advantageous, however, to study wrestling holds. There is a simple "tug-of-war," in which two children, taking hold of the same broomstick and sitting down with the feet braced against each other, try to pull each other over. Let the two take hold of a broomstick high above the head and bring it downward between them, each one trying to twist the stick in the hands of the other. This requires and develops a tight grip. There is a great variety of exercises of this type, all appealing to the mind of a child and all valuable. If gymnastic apparatus is available it will be a great help, but it should not be taken seriously. The children should not strive to make records or to do difficult feats. They should simply "play" on the apparatus so as to get the most fun. For girls, folk-dancing is especially suited. Simple balancing exercises will give grace, poise and bodily control.

Children are not suited to endurance work. Their exercise should be active in character, but not long continued. There should be a variety in their exercise. This is one reason why baseball is a splendid game for boys old enough to play it.

The Slender Child.—Slenderness in itself does not indicate a lack of vigor. Children, like adults, are of various types. Some are naturally more short and stocky, while others are taller with light bones. The frail child is thin from lack of development, but the naturally slender child may be only light-boned, and may really be in perfect health, with good color and remarkable strength and vitality for his weight. Such a child is usually a good runner and very active. but when the slender child is pale and inactive, with a thin neck, drooping head, round shoulders, a flat chest and pouchy abdomen, he needs a rigid course of physical training

From the age of twelve to sixteen or seventeen some children are slender because of growing tall very fast. Their vitality is often expended in this rapid growth and they may not have the stamina of boys and girls who have grown more slowly and who have filled out more during the process. These apparently "over-grown" young people will fill out later if in good health, but they should not attempt to compete in athletic games with others of their height simply because they are tall. They cannot be expected to have the same endurance. Athletic work for all young people during the period from boyhood or girlhood to manhood and womanhood should be carefully supervised. Athletics are undoubtedly of great value, but in occasional instances may be carried too far if not closely looked after. Athletic directors are supposed to look after this, but it should be the duty of every parent to take a personal interest in the matter.

Exercise for Babies.-A healthy baby, as a rule, requires no special exercise. What he needs most of all is sufficient freedom in his clothing to allow him to kick and use his arms. Babies should not be bundled too much. An air bath once each day in a warm room will be of great value. This may precede the daily bath. Place the baby on a heavy quilt on the floor and let him kick, roll and wiggle. In this way he will gain the strength that will enable him to creep when he gets ready for it.

Passive exercises may be given the baby by moving his arms and legs in a manner suggested by ordinary calisthenic work. Such movements will stretch his little body, expand his chest and improve his circulation. Take the little arms, raise them above the head, then down, draw them out to the side and then back. Double the knees up against the chest, then straighten them. Put the child through a variety of other movements. Let him take hold of your fingers and then partially lift him. You will soon find that he can sustain his entire weight by his grip. Massage will be especially valuable, kneading the arms and legs lightly but thoroughly, and especially massaging or rubbing the back, chest and abdomen. A quick, circling movement is especially suggested for massage of the back, chest and stomach. This massage, if used, may follow any exercise given and precede the bath. When the baby learns to creep or hitch this will mean a great deal of exercise. He should not be forced or urged to walk until he does it of his own accord.

BOOK XVIII

Is a treatise on Full or Complete Breathing as practiced by the Hindu Yogis, together with a series of Remedial Exercises designed to correct bodily infirmities.

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Book XVIII

THE SCIENCE OF BREATH

THE RESPIRATORY SYSTEM.

It is an axiom that "breath is life." It may likewise be said that the manner of breathing vitally affects the length of life, yet few people appreciate the significance of this fact.

Breathing is dependent upon the organs of respiration—that is to say, upon the lungs and the air passages leading to them. There are two lungs, separated from each other by the heart, the large blood-vessels and the large air tubes, each being connected with the heart by arteries and veins. The lungs themselves are porous and spongy, their tissues having great elasticity. They are covered by a sac or thin double wall, known as the pleura, one side of which is attached to the lungs and the other to the inner walls of the chest. The pleura secretes a fluid which acts as a lubricant to the inner surfaces involved, and enables them to glide upon each other without friction in their respective movements in breathing. The pharynx, larynx and the windpipe or trachea, together with the bronchial tubes, form the air passages to the lungs. Nature intends that we should draw air into and expel it from the lungs through these passages and has provided the nose as the medium of passage. These are provisions of nature, yet a considerable percentage of humanity breathes chiefly through the mouth. In breathing air through the nose the temperature is properly regulated by mucous membranes especially adapted to the purpose. In breathing through the mouth this design of nature is frustrated. In breathing through the nose not only is the air modulated to the temperature which the lungs require, but it is freed of germs detrimental to the lungs. In breathing through the mouth a false medium is employed and the air passes into the lungs without divestment of germs which the nose channel would have thrown off.

Air is drawn into and expelled from the lungs by action of the diaphragm, a strong, flat, sheet-like muscle lying across the chest and separating the chest-box from the abdomen. When the diaphragm expands the elastic lung tissues are correspondingly stretched and the lung cavities thereby enlarged, creating a vacuum, into which air from without is drawn; when the diaphragm relaxes the air is expelled. This action of the diaphragm is almost as automatic as that of the heart, but unlike heart-action it may to a very considerable extent be controlled by will-power.

In a consideration of breathing it is necessary to have in mind the manner of the circulation of the blood. By the heart's action the blood is forced through the arteries and capillaries to all parts of the body and then returns to the heart through the veins, which are reached by capillaries throughout the body. After regeneration by medium of the capillaries of the lungs, the blood, in a red, rich condition having life-giving properties, passes through the left auricle into the left ventricle, and thence through the arteries and capillaries, distributing its life-giving properties to the body as it goes, but as it returns through the veins it picks up the waste materials of the system and reaches the right auricle of the heart, blue in color and robbed of its life. As this auricle becomes filled it contracts and drives the blood through an opening into the right ventricle of the heart, from whence it is forced into the lungs and distributed by millions of hair-like blood-vessels to the air cells of the lungs. The texture of these blood-vessels of the lungs is sufficiently dense to prevent any outlet of blood, yet porous enough to permit the passage of oxygen which has reached the lungs in breathing, and this oxygen if received in sufficient quantity drives out the impurities, and the re-oxygenized blood passes from the blood-vessels of the lungs through the left auricle of the heart to the heart's left ventricle, from whence it is again forced through the arteries. When it is remembered that in the ordinary man approximately 35,000 pints of blood pass through the capillaries of the lungs each twenty-four hours, it will be evident that unless fresh air reaches the lungs in sufficient quantity the poisoned blood cannot be fully purified and waste products which should have been eliminated must return to and poison the system. When properly oxygenized by fresh air not only is the poison in the blood eliminated, but the newly-charged blood carries some twenty-five per cent. of free oxygen which in its arterial course it distributes to all the cells, tissues, muscles and organs of the body, even the lungs themselves. Insufficient oxygen means imperfect elimination of poisonous matter and consequently poor nutrition and ill health.

For proper re-oxygenation of the blood as it passes through the blood-vessels of the lungs it is not sufficient for the air to merely reach certain of the air-tubes of the lungs, but that it should reach every part of all the air cells, and this cannot be accomplished unless the manner of breathing through the nose and so regulating the action of the diaphragm that it will produce the requisite inhalations and exhalation of the lungs, and this action of the diaphragm can be regulated by the will in the same manner that an arm may be raised or a foot extended. This means full or complete breathing and implies more than is commonly meant by deep breathing. In shallow breathing only a portion of the lung cells are reached, the blood is correspondingly imperfectly oxygenized and the whole system suffers in proportion to the under-oxygenation.

Reverting to the nose and mouth as mediums of breathing, man's mechanism is so constructed that he may breathe through either, but nose-breathing properly exercised brings health and strength, while mouth-breathing cannot but result in weakness and disease. Many diseases to which man is subject can undoubtedly be attributed to the ill, but common habit of mouth-breathing. Every mother should carefully watch her infant, close its lips and bring about the habit of proper breathing. When the child seems inclined to breathe through the mouth, the error may usually be corrected by tipping the head slightly forward when asleep. This causes the mouth to close and forces the nose to perform its functions. Contagious diseases are much more easily contracted by mouth-breathers than by nose-breathers. The nostrils have natural protective apparatus which filter all air as it passes through and do not permit obnoxious ingredients to pass to the lungs. Mouth-breathing, on the other hand, permits the passage to the lungs of germ-laden dust and other deleterious things and not only so, but permits air to pass which is not adapted to the sensitive requirements of the lungs in the matter of temperature and therefore causing inflammation of the respiratory organs. In nose-breathing the impurities which are stopped by the mucous membranes of the nostrils are duly thrown off by exhalation and should they by any means have penetrated beyond these membranes, they are usually still thrown off because of an irritation in the nostrils resulting in a sneeze, which ejects them. This does not happen in mouth-breathing. Those who have been habitual breathers through the nose are seldom troubled with clogged or stuffy nostrils, but those who have been addicted to mouth-breathing may find that the nose to a certain extent has lost its facilities and may be subject to clogging. In such cases the nose should be thoroughly cleansed each day with tepid water, which may be administered through a small glass nasal douche, purchasable from any druggist, or in lack of such by snuffing the water up the nostrils, permitting it to run down the nasal passages to the throat and then ejecting it through the mouth. Each morning it will be found well to stand in front of an open window, close one nostril with the finger and breathe the air through the open nostril, repeating this several times, changing from one nostril to the other. A little vaseline or camphorated ice rubbed in the nostrils at time of retiring and placed as far up as the little finger will reach will be found very beneficial in such cases.

The mechanical arrangements of respiration manifest themselves through: (1) elasticity of the lungs, and (2) the activity of the thoracic cavity (commonly referred to as the chest), in which the heart and lungs are contained, and which is bounded by the spinal column, the ribs with their cartilages, the breast bone and the diaphragm. There are twenty-four ribs, twelve on each side, emerging from the spinal column. The upper seven pairs which are fastened directly to the breast bone are called true ribs, while the lower five pairs which are not fastened to the breast bone are known as false or floating ribs, the upper three being fastened by cartilage to the other ribs, the remaining two pairs having no cartilages and being free at their forward ends. The ribs move in respiration by means of two muscular layers called the intercostal muscles, being affected by the action of the diaphragm, which separates the thoracic cavity from the abdominal cavity. Without action of the diaphragm and its dependent intercostal muscles the lungs cannot expand, and upon the extent of the action of the diaphragm the sufficiency or insufficiency of the air taken into the lungs depends. A proper control of the action of the diaphragm is therefore necessary in order to secure proper lung expansion and send properly oxygenized air through the arteries to the cells and tissues of the body.

Respiration may be divided into four classes, namely: high breathing, mid breathing, low breathing and full or complete breathing.

In high breathing the ribs are elevated and the collar-bone and shoulder raised, the abdomen being drawn in so as to push against the diaphragm, which is also raised. This action simply calls into requisition the upper or smallest portion of the lungs and consequently permits but a minimum amount of air to enter the lungs. Notwithstanding that this form of breathing requires the greatest expenditure of energy, it is commonly the only way of breathing with many people, especially among women.

Mid breathing, known as rib breathing and intercostal breathing, although superior to high breathing, is nevertheless inadequate. The abdomen is drawn in and the diaphragm pushed upward; the ribs are somewhat raised and there is a partial expansion of the chest. It is perhaps the most common form of breathing.

Low breathing is known under many different names, such as deep breathing, diaphragmatic breathing, etc., and has much to be said in its favor. It is in every sense superior to high breathing and mid breathing, yet cannot be termed as full or complete respiration. It fills the lower part of the lungs and a considerable portion of the middle part, but it does not fill the entire lung space.

Full or complete breathing embraces all the advantageous points of high, mid and low breathing without any of their objectionable features. The entire respiratory apparatus is brought into play and every air cell is reached. The complete respiratory system responds to this breathing, producing the maximum amount of benefit with a minimum expenditure of energy. The thoracic cavity is increased to its full limit in every direction, each part performing its natural function in a natural way. In no other form of breathing are all the respiratory muscles brought into play, but in complete breathing every respiratory muscle is used, the ribs are forced into useful activity and not only increase the space in which the lungs may be expanded, but give proper support at needed points. The diaphragm draws the ribs slightly downward, while other muscles hold them in place, and they are forced outward by the intercostal muscles. This increases the mid-chest cavity to its full natural capacity. The intercostal muscles also lift the upper ribs and force them outward, thereby increasing the upper chest capacity to its maximum.

It requires study and practice to acquire such mastery of complete breathing as will enable one to carry on the process as the natural method of breathing, but the results obtainable are so great and so beneficial that no one, once having become master of the art, will go back to the old method of breathing. The complete breath is not abnormal, but on the contrary the only natural way of breathing, and the healthy infant, even in civilization will usually be found to breathe in this way, but neglect in the care of children and unnatural methods of living, clothing, etc., result in unnatural forms of breathing. While the form of complete breathing should be followed at all times it is not essential that the lungs should be completely filled at each inhalation.

Ordinarily the average amount of air taken in breathing is adequate, provided the complete form be followed, for in complete breathing, be the quantity inhaled large or small, it is evenly distributed to all parts of the lungs. But at least several times a day, and the more frequently the better, a series of complete breaths should be taken in such manner as to completely fill all parts of the lungs with fresh oxygen.

In a later part of this chapter will be found a complete series of exercises to be used in the development of different parts of the body, but the following exercise will give a clear idea of the manner of complete breathing:

Sit or stand erect. Breathe steadily through the nose in such manner as to fill the lower part of the lungs, to accomplish which the air must press upon the diaphragm so as to cause it to descend with gentle pressure upon the abdominal organs, forcing the front walls of the abdomen forward. Now fill the middle part of the lungs. This will push out the lower ribs, breast bone and chest. Now fill the higher portion of the lungs, forcing the upper chest outward and lifting the whole chest, including the upper pairs of ribs. In this last mentioned movement there will be a slight drawing in of the lower part of the abdomen, giving the lungs support and also aiding in the filling of the highest part of the lungs. Although these are described as if they were three separate movements, the whole operation is one continuous action, commencing at the lower diaphragm and gradually, but continuously, coming upward until the highest points of the lungs have been reached. Jerky inhalation should be avoided and a steady, continuous action strived for. At first there will be a tendency to divide the inhalation into three movements, but comparatively little practice will overcome this. Retain the breath a few seconds, then slowly exhale, the chest being held in a firm position, the abdomen being drawn slightly inward and slowly upward as the air leaves the lungs. Upon complete exhalation relax the chest and abdomen. It will require some practice to perform this exercise easily, but once mastered, the movement will be performed almost automatically.

This method of breathing brings into play all parts of the respiratory system, the most remote air cells being exercised and the chest cavity expanded in every direction. It will be found advantageous in beginning to practice this breath before a large mirror. Lightly place the hands upon the abdomen so that the movement may be felt. Watch the whole chest movement in the mirror and endeavor to make the inhalation reach the different parts of the lungs in continuous, not spasmodic succession. While there should not be straining in taking the complete breath, it will be found well occasionally, at the end of an inhalation to slightly elevate the shoulders, which will raise the collar-bone and permit air to pass freely into the small upper lobe of the right lung, which is frequently a breeding place of tuberculosis.

It is believed that those who habitually utilize the form of complete breathing in their respirations will be immune to consumption and other pulmonary troubles, and that with those who have already contracted this wasting disease, it will do much in amelioration if it does not positively cure. Low vitality is a principal cause in consumption, and low vitality is largely attributable to an insufficient amount of air being inhaled, causing a considerable portion of the lungs to remain inactive, and these inactive parts become inviting fields for germs. If the lungs be in healthy condition they will resist germs and habitual complete breathing of pure air will keep the lungs in healthy condition. Consumptives are almost invariably narrow chested, which simply means that they have been addicted to improper methods of breathing, for those who have been accustomed to complete breathing will always be found with full, healthy chests. Those who are narrow chested may develop normal proportions by adopting the mode of breathing here prescribed.

Colds may frequently be prevented by a little vigorous breathing when it is felt that one is unduly exposed. If chilled, utilize the complete breath vigorously for a few minutes, when a glow will be felt over the whole body. It is claimed by some people that most colds may be quickly cured by complete breathing and partial fasting.

It has been shown how under-oxygenated blood (caused by improper breathing) becomes poor in quality, is laden with many impurities and carries disease instead of nourishment throughout the system. Every organ is dependent for nourishment upon the blood, and impure blood must have a detrimental effect upon the entire system. The stomach and other organs of nutrition cannot be properly nourished when there is improper breathing. Not only are these organs themselves ill-nourished, and therefore unable to properly perform their functions, but the food itself must absorb oxygen from the blood and thus itself be oxygenated before it can be digested and assimilated.

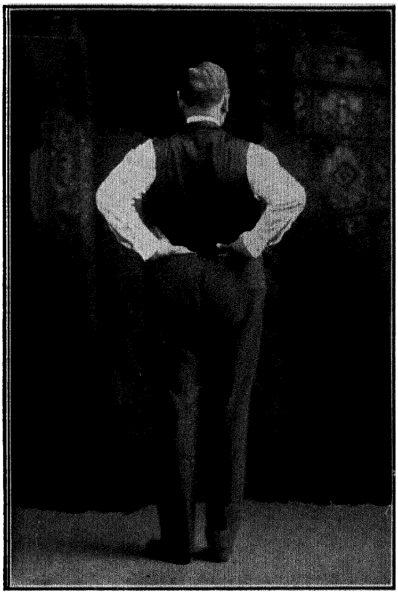
The nervous system also suffers from improper breathing because the brain, the spinal cord, the nerve centers and the nerves themselves depend upon the blood for their nourishment, and when the blood is impure they become inefficient mediums for generating, storing and transmitting nerve currents.

EXERCISES IN FULL OR COMPLETE BREATHING.

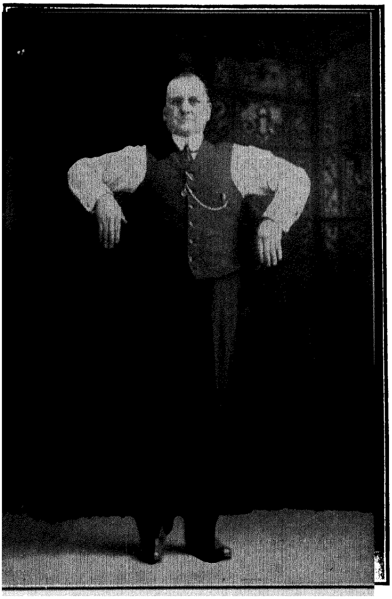
Whatever may be considered of them otherwise, it is a recognized fact that the Yogis of Hindustan are practically without exception superbly physicaly developed. Their claim is that this physical development is due to complete breathing, which has been practiced by them and their forebears for many centuries. They have many exercises, some of which they claim produce mental and psychic conditions, but the following exercises are those most generally used by them for physical development:

Cleansing Breath.—This has for its object the ventilation and cleansing of the lungs. It is a common practice to conclude breathing exercises with this cleansing breath, the claim being that it cleanses and ventilates the lungs and generally refreshes the entire system, and that it is especially restful to speakers and singers who are tired from excessive use of the respiratory organs. (1) Inhale a full or complete breath and retain this for a few seconds. (2) Without swelling out the cheeks pucker up the lips as if about to whistle and then with considerable force exhale a small quantity of air through the opening. Now stop for a moment and then exhale a little more and again stop, and continue in this manner until the air is completely exhaled. Do not forget that each time the air must be forced from the mouth with considerable vigor. This cleansing breath will be found very refreshing when one is tired or exhausted. It should be practiced until its performance becomes natural and easy.

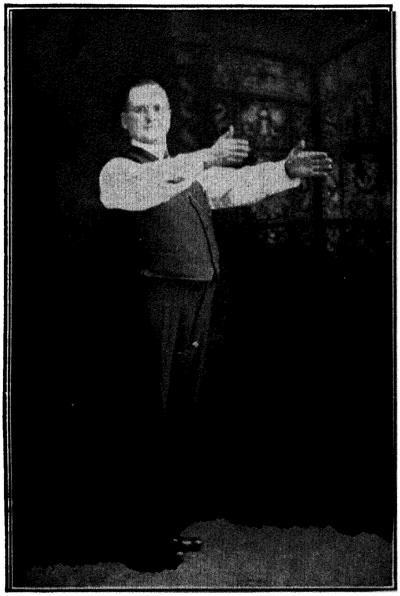
Nerve Vitalizing Breath.—The claim for this breath is that it is one of the strongest nerve stimulants possible to be used, developing nerve force, energy and vitality, and by working on important nerve centers stimulates and energizes the entire nervous system, sending increased nerve force to every part of the body. (1) Stand erect and inhale a complete breath and while retaining it extend the arms limply straight in front, using only sufficient nerve force to keep them in that position. (2) Draw the hands slowly back toward the shoulders, gradually putting nerve force into the muscles in such manner that when the fists reach the shoulders they will be so tightly clenched as to give the feeling of tremulous motion. (3) Keep the fists closed and the muscles tense and push the arms slowly outward to their full extent and then, still keeping them tense



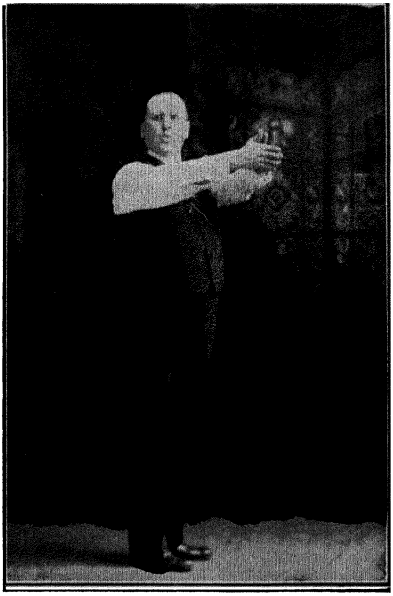
Correct Position for Complete Breathing.



Filling the Upper Lobe of the Right Lung.



Nerve Vitalizing Breath.



Cleansing Breath.

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draw the fists quickly back to the shoulders. Repeat this several times. (4) Exhale vigorously through the mouth and then practice the cleansing breath. To secure full effect not only must the lungs be thoroughly filled, but special attention given to drawing back the arms with speed and in keeping the muscles in a highly tense state.

Vocal Breath.—The object of this breath is to develop the voice. It is claimed for it that it makes the voice soft and flexible, yet thoroughly resonant. (1) Take complete breath very slowly, but steadily, using utmost possible time in the inhalation. (2) Retain the air in the lungs for a few seconds and then vigorously expel it through the mouth with one strong, forceful breath. (3) Follow with a cleansing breath which will rest the lungs.

Retained Breath.—The object of this breath is to strengthen and develop the respiratory muscles and the lungs. It also has a tendency to expand the chest. It is claimed for it also that it is very beneficial to the organs of nutrition, the nervous system and the blood. The retention of the full breath has a purifying effect upon the air remaining in the lungs from former inhalations and not only so, but during its retention it gathers up all waste matter in the lungs and carries it out of the system when the breath is expelled, cleansing the lungs as thoroughly as a purgative does the bowels. It is recommended for various disorders of the stomach, liver and blood and is helpful in relieving bad breath when this is attributable to poorly ventilated lungs. (1) Stand erect and inhale a complete breath and retain it as long as it can comfortably be held. (2) Vigorously exhale the air through the open mouth and then practice the cleansing breath. In early efforts it will be found difficult to retain the breath for more than a very short time, but with constant practice this difficulty will be overcome. By timing yourself with your watch you will be able to note steady progress.

Lung Cell Stimulation.—This breath is intended to stimulate the air cells of the lungs. Beginners must be very careful not to overdo it, and under no circumstances should it be practiced vigorously. It sometimes causes slight dizziness with beginners. In such cases the exercise should be discontinued for some time. To relieve the dizziness take a short walk. (1) Standing erect with hands at sides slowly and gradually take a complete breath and while inhaling raise the arms and with the finger-tips gently tap the chest at different points. (2) The lungs being filled, retain the breath, at the same time patting the chest with the palms of the hands. Then practice the cleansing breath. With those who have been accustomed to imperfect breathing for years, many air cells will be found inactive, sometimes almost atrophied, and it will take considerable time and careful practice to revive them to activity, but regular and continued practice of deep breathing and the careful daily use of this exercise will have most beneficial effect.

Rib Stretching.—Owing to the cartilages with which they are fastened the ribs are subject to considerable expansion, and in proper breathing play an important part in respiration. It is therefore well to give them special exercise in order that their elasticity may be preserved. With people of sedentary habits the ribs are likely to become more or less stiff and inelastic, and in order to enjoy the full benefits of complete breathing this unnatural condition should be overcome. (1) Standing erect, place the thumbs close under the armpits with the palms on the side of the chest and the fingers over the breast. (2) Inhale a complete breath and retain it for a short time. Then slowly exhale, gently squeezing the sides with the hands while doing so. Follow with the cleansing breath. This exercise should be used with moderation.

Chest Expansion.—The object of this exercise is to restore natural chest expansion when the chest has become contracted from bending over work or other cause. (1) Stand erect and inhale a complete breath. Retain the air and while doing so extend both arms forward, bringing the two clenched fists together on a level with the shoulders. (2) Swing the fists vigorously until the arms are sideways in line with the shoulders. Then bring the arms back to their position in front of the body and repeat this movement several times. (3) Vigorously exhale through the open mouth and practice the cleansing breath. This exercise must be used with moderation and with caution.

Walking Exercise.—This exercise will not only be found generally helpful, but it is an excellent method of practicing the complete breath. One should walk in military style—that is, with head erect, chin drawn slightly in and shoulders back, the pace being measured. (1) While walking, inhale a complete breath, mentally counting each step and making the inhalation extend over eight counts. (2) Still counting the steps, slowly exhale through the nostrils through the counting of eight more steps. (3) Continue walking and counting, but do not breathe until another eight steps have been taken, then repeat the inhalation and exhalation in the same manner and with the same counting. This may be kept up until there is a feeling of being tired, when it should be discontinued and resumed at pleasure. This exercise should be practiced several times every day. Some people find it advantageous to retain the breath during a count of four steps, then exhaling in an eight step count as described.

Morning Exercise.—Standing erect with head up, chin in, shoulders back, eyes front, hands at sides and knees stiff, raise the body slowly on the toes and while doing so steadily and slowly inhale a complete breath. Retain both breath and position for a few seconds and then slowly sink back to the first position, slowly exhaling through the nostrils while doing so. Repeat the exercise several times, varying it by standing on right leg alone and then on left leg alone. Follow with the cleansing breath.

Stimulating Circulation.—The object of this exercise is to stimulate the circulation by driving blood to the extremities through the arteries and drawing it back to the heart and lungs through the veins in order that the blood may receive an extra charge of oxygen through the quickened circulation. In cases of anæmia and poor circulation there may not be enough blood in the lungs to absorb the increased amount of oxygen inhaled in complete breathing, and such persons therefore do not enjoy the full benefits of complete breathing. The occasional practicing of this exercise with the regular complete breathing will aid in bringing about an absorption and assimilation of the increased oxygen. (1) Place a cane or stick on a low table, and standing erect in front of it, inhale and retain a complete breath, and while retaining bend slightly forward and firmly grasp the stick and gradually exert your full strength upon the grasp. Then relax the grasp and return to the first position, when slowly exhale. Repeat several times and follow with the cleansing breath.

Rhythmic Breathing.—It is well known that there is great power in rhythm. A note on a violin sounded repeatedly and in rhythm will start vibrations which, if properly directed, would move ponderous bodies. When moving in body soldiers are supposed to keep step, but when crossing a bridge they invariably break the general body step, each soldier walking without regard to the stepping of the man around him, and the whole body thus marching without uniformity or rhythm. If this were not done the steady, rhythmic tramp of thousands of soldiers would set up such vibration that the bridge would collapse. Rhythmic breathing acts in this same way upon the human body and if it be brought into full rhythmic harmony with the will it can be directed to increase nerve currents to different parts of the body by the will. It is first necessary to be thoroughly and practically familiar with and habitually accustomed to complete breathing, after which the full mental idea of rhythm must be acquired. The measured counting in music: one, two, three, four; one, two, three, four, or the rhythmic step of the soldier: left, right; left, right, are symbolical of the idea. In breathing the rhythm must be with the heart-beat and as the heart-beat varies in different persons, the heart-beat unit of each individual must be his or her rhythmic standard. The heart-beat may be ascertained by placing a finger over the pulse on the wrist and counting: one, two, three, four, five, six; one, two, three, four, five, six, and continuing this until the measure or rhythm of the beats becomes thoroughly fixed in the mind. Very little practice will so positively fix this rhythm in the mind that there need be no actual counting in making the breathing correspond to the heart-beat. The average beginner inhales in about six pulse units, but in some cases it may run to seven or eight, and these numbers with practice will gradually increase. The exact counting to a measure must depend upon the individual and must be decided by himself, but the idea is the same whether the measure or rhythm be covered by four or eight pulse units. The rhythmic units of inhalation and exhalation are the same, but the units for retention and the units between breaths should be one-half those of inhalation and exhalation—that is to say, if the rhythmic inhalation be eight pulse beats, the rhythmic retention will be four beats, the rhymic exhalation eight beats, and the rest until the next inhalation four beats.

The Hindu Yogis claim wonderful psychic effects as possible with a full knowledge of rhythmic breathing, but without taking up this phase of the matter, which is foreign to our present discussion, and considering rhythmic breathing simply as respects its relation to the physical effects of complete breathing, the following exercise will be demonstrative of rhythmic effect: (1) Sitting erect, but in an easy position, yet with the chest, neck and head as nearly as possible in line, shoulders slightly thrown back and hands quietly reposing on the lap, slowly inhale a complete breath, counting six pulse units. (2) Retain this breath while counting three pulse units. (3) Exhale slowly through the nostrils during the time of six pulse units. (4) Count three pulse units and then again inhale. Repeat this a number of times, but be careful not to do so to a point of fatigue. When you feel that the exercise has been sufficiently prolonged follow with the cleansing breath, which will not only rest you, but cleanse the lungs. Gradually with practice, the duration of the inhalations and exhalations will increase until perhaps fifteen pulse units indicate a measure or rhythm and it is to be remembered that he units for retention and between the breaths increase in like proportion—that is, they continue to be one-half of the units of inhalation and exhalation. Always avoid becoming tired in this exercise. Practice it frequently, but in no instance excessively continue any one exercise, but on each occasion pay all possible attention to acquiring the "rhythm," until the measured swing of the rhythm may be felt as a vibratory motion throughout the whole body. It will require time and much perseverance to accomplish this, but the gratification that will come as improvement is observed will make the task a pleasing one.

SEVEN SIMPLE EXERCISES IN COMPLETE BREATHING.

Being a Condensed Course in Physical Culture and Lung Development.

1. Standing erect, with hands at sides, inhale a complete breath and retain it, raising the arms rigidly until they meet above the head; hold them there a moment and then lower the hands slowly to the sides, exhaling slowly at the same time. Follow with the cleansing breath.

2. Standing erect with arms straight in front, inhale and retain a complete breath. Then swing the arms back as far as they will go, and still retaining the breath, bring them forward to the first position and repeat the whole movement several times without any exhalation. Then exhale vigorously through the mouth and follow with the cleansing breath.

3. Standing erect with arms straight in front of you, inhale complete breath; swing the arms around a few times in a backward circle, then reverse the motion. The breath must be retained throughout all the motions. Then exhale vigorously through the mouth and follow with the cleansing breath.

4. Lying face downward on the floor with palms of hands flat upon the floor at the sides, inhale and retain complete breath. Then stiffen the body and raise it by the strength of the arms until the whole weight is upon the hands and toes. Then lower the body to its original position and exhale vigorously through the mouth. Follow with the cleansing breath.

5. Standing erect with your palms against the wall, inhale and retain a complete breath, then with the weight of the body on the hands push the chest forward against the wall; then, keeping the body still and using only the arm muscles push the body back to the original position; then exhale vigorously through the mouth and follow with the cleansing breath.

6. Standing erect with the hands resting on the waist and the arms akimbo, inhale and retain a complete breath; then keeping the hips and legs stiff, bend well forward, slowly exhaling as the forward movement is

made. Returning to the first position inhale again and then bend backward, slowing exhaling; resuming the first position and inhaling, bend to one side, exhaling, and then repeat by bending to the other side. Follow with the cleansing breath.

7. Standing or sitting erect with straight back, inhale a complete breath, not in the usual continuous manner, but instead in a series of short quick breaths, adding one breath to the other without exhaling until the lung space is completely filled. After retaining this series of breaths for a few seconds, exhale through the nostrils in one long restful exhalation. Follow with the cleansing breath.

The exercises which have been given are useful to all people of whichever sex. They may be brought into utilization in youth or old age, but they should be put into effect from early infancy. The mother should carefully guard all points of breathing. She should see that the child from its earliest days does not breathe through the mouth, she should take every precaution and use every endeavor to bring about breathing through the nostrils. As the child grow older and commences its infantile frolics this point still should be guarded and at a very early age instructions should be commenced as to the proper form of breathing. Very simple demonstrations will appeal to the little child in a way that will bring effects that could not be accomplished in later years. The great point is to make it become natural with the child from its earliest beginnings to breathe in the right way, so that it will not need to be a lesson to be learned, but something that is naturally done. It is not advocated that the whole series of breathing exercises set forth in this chapter should be taught, but that the natural art or system of nature as it exists and is demonstrated by complete breathing should be instilled into the child in its early, plastic age, so that there may be no thought nor effort in later years as to how or why this particular form of breathing should be performed, but that it comes as a natural part of existence.

There is one point in connection with complete breathing which must not be lost sight of, and it is this—there should be no straining of the lungs nor muscles in endeavors to carry out the exercises which have been outlined. This is to be especially noted in respect of those whose lungs are weak and still more especially when there has been indication of hemorrhage. Where tendency to hemorrhage exists it is evident that the minute blood-vessels of the lungs have become deteriorated and are susceptible to strain of any kind and should complete breathing be exercised with straining effort it follows that there must be danger of rupture of the vesicles and hemorrhage may ensue. This does not mean to say that complete breathing should not be adopted by people with weak lungs, but simply that there should be no undue straining. With one whose lungs are strong and in healthy condition, vigorous and even strained effort may be employed, but with those whose lungs are weak it must be a matter of quietly endeavoring to reach the extremities of the lungs to an extent that never before has been reached, yet without strain. In other words, do not attempt to completely fill each and every cell of the lungs by strenuous effort, but quietly reach the entrance to all the cells by the complete breath inhaled and exhaled without undue effort, and gradually these entrance cells will open the way to the deeper parts and permit the entry of oxygen or life-giving source to cells which have become dormant.

REMEDIAL EXERCISES

By Remedial Exercises, we mean particularly a scientific series of movements bringing into play and developing those muscles that hold, encase or control, the great vital organs: the heart, lungs, kidneys, liver, intestines and female organs of generation.

FIRST EXERCISE (For Men and Women).

Object.—To tone up and strengthen heart, lungs, stomach, spleen, liver and intestines.

Place the hands, closed, on chest with knuckles touching, the elbows raised until forearms are horizontal. Completely fill the lungs, then close throat as if swallowing; holding the throat closed, lower chest and force air fully into the lower lungs by distending the abdomen. Still holding throat closed, contract abdomen and inhale in upper lungs, spreading chest as fully as possible. Be careful to hold the throat closed, not allowing air to escape while distending abdomen and chest. Repeat five to ten times. Relax chest and exhale slowly.

SECOND EXERCISE (For Women).

Object.—To strengthen kidneys and ovaries.

Lie on floor or bed; clasp hands over head. Stretch downward with right leg, reaching far as possible with the leg, until the right hip is drawn so that a line from the armpit to the hip is straight. Center your thought on the muscles of the hips and buttocks. While holding right hip and leg tense, reach up with the left hip, drawing same as high as possible. The left hip bone in this exercise may be brought as much as four inches higher than the right. Change, stretching left and raising right hip. Repeat twenty times, alternating ten times with each hip.

THIRD EXERCISE (For Women).

Object.—To bring weakened organs back to normal strength and proper position in the body. Beneficial in kidney trouble, ovarian disorders and prolapsus of the uterus.

Lie on the back with hands folded under the head. Bend knees, bringing feet close to body. Raise heels, supporting body on head and shoulders, and raise thighs slowly until body curves upward from knees to neck. Now draw feet still closer and contract muscles of abdomen, hips and back, making them rigid. Lower body nearly to floor and raise again while keeping abdominal muscles tense. Raise and lower five times; rest; repeat five times.

FOURTH EXERCISE (For Men and Women).

Object.—To check and prevent cold, catarrh, hay fever, asthma, bronchitis and similar ailments.

Lie on back with arms and legs relaxed. (1) Distend muscles of the abdomen; relax. Repeat five times. (2) Distend muscles over stomach; relax. Repeat five times. (3) Lift chest upward, trying to make it touch chin, but do not raise small of back too far from floor. The abdomen in this movement draws in tensely. Now relax chest. Repeat five times. Distend and relax as in (1); follow directly with (2). Continue this movement to (3), abdomen tense. This creates a surging movement affecting many important muscles. Repeat the movement five times. Take every night on retiring; follow by ten deep, full, strong breaths.

FIFTH EXERCISE (For Men and Women).

Object.—To correct catarrhal condition of the nose and throat.

Distend muscles over diaphragm with strong, quick movement. This is done by keeping mouth closed, inhaling quickly through the nostrils, which will close quickly as the muscles contract. This exercise should be done vigorously, and will cause a loud sniffling sound, both in inhaling and exhaling. Distend muscles to the fullest extent, contracting quickly and repeating in rapid succession ten times.

Book XIX

RECREATIONAL SPORTS AND GAMES

THEIR INFLUENCE UPON HEALTH

Sports and Games.—The health standard of our nation is beneficially influenced by our sports and games. We have reverted to the doctrine of the Greeks and Romans that a sound mind cannot in general exist without a sound body, and that the education of the young is the development and discipline of both body and mind. The condition of the nervous system depends upon the purity and vitalizing power of the blood, and upon the tone of the muscular system which it permeates in every part. And this nervous organism is the seat of thought, will, intellectual and spiritual life as well as of all the sensations. Therefore, while our schools are training the minds of the young, separating the child so many hours from his home that the parent has but little time to oversee physical upbuilding, our educational system must provide also this physical foundation upon which mental growth may expand. The sports and games of the young are not lures and bribes to win an eager attendance at school. Their attractiveness is a welcome feature, but the pleasure, enthusiasm, and excitement of school athletics are but the sugar coating which renders the physical side of education an easy potion to take and assimilate. The parent must not consider the time given to tennis, basket ball, and football as so many periods of study and recitation lost from the preparation for life work. In manufacture, improved machinery lessens the time of production and increases the output. With improved physique less time is required for the same mental accomplishments and a higher quality of mental equipment is produced.

Development of Physique.—Our sports and games have become national enterprises and every school has its athletic association and its schedules of games for all seasons of the year. So varied are these means of activity that a good general physical training results, since the small minority who do not play upon the representative and scrub teams are stimulated by the atmosphere of physical activity to other than the team sports; for instance, rope jumping, tag, leap frog and the like. The results of training for sports and of playing games become apparent in body and mind. The bones are hardened; their marrow contents, in which the vitalizing elements of the blood are generated, are given a healthy life. The muscles are stimulated to absorb developing material in excess of all waste material, therefore gradually increase in size and power, and acquire a tone and responsiveness that make the physical organism efficient. As already stated, the nerves respond to the increased vigor and tone of the muscular system, since this is the soil in which they actuate; the circulatory and digestive systems are invigorated; and more than all, the lungs are expanded and strengthened and the heart's action throbs strongly and steadily and works with power and precision in conjunction with the brain that has grown vigorous with a lively initiative and activity. This is the ideal condition of the human body for health and longevity. The impetus which youth thus acquires will bear the system, as on the flight of powerful pinions, through years of confining and exacting toil that business and professional life hold awaiting in the future. With proper regard to the simple principles and observations of health requirements this superb physical equipment which sports and games induce contain the best promise of success in life that youth can possess. For the most elaborate process of schooling, without abundant physical foundation, will glide without trace through an inefficient brain or become inoperative through broken health.

The Mental Effects.—In this physical training children are induced to consider their bodies as of some use and value to them in accomplishing a certain determined task. They use thought and attention to develop any deficient organs and muscles so as to become expert in their sports. Besides, an intellectual grasp and animation is incidentally produced, which is apparent in every school where the best athletic practice and success prevail. The boys and girls who are leaders upon the field are generally well advanced in school work, especially so since only those who rank well are permitted upon the teams. There can be no similar and no equally stimulative impulse to self betterment in the lives of the young than the present keen and universal interest in our sports and games, known as athletics. A high sense of self-respect, of respect for opponents, courtesy and instinct of fair play and impersonality of conduct are all promoted by the methods of modern-day sports. Almost always the game is played for the sake of the game so as to do the best possible, and not merely to win, and the trickster and the cheat have come to be regarded with contempt. Nothing can be better for the health of mind and body than the athletics of today taken as a whole and regarded as the broadest minded leaders of social and educational progress now consider them. They are the best available means for fitting the young to become efficient workers and leaders, robust and sound in bodies and disease resistant.

The Common Sports as Health-Builders.—There is so much misinformation upon the general influence of the different sports and games upon health that a short explanation of a few of the most common, presented in the light of physical developers and health agencies will not be out of place in such a work as the LIBRARY OF HEALTH, which considers every means for health promotion. It will naturally be impossible to give any detailed directions for playing these games, but a mention of the distinctive features of each, as applied to health building, will be appropriate. The exertion in most of the field and team sports is often so extreme that anyone who has heart difficulty or any chronic ailment should avoid these strenuous games. All the games afford admirable development if the player's physique can endure the severity of the effort and if he is well constituted and rugged and is in condition to require heavy exercise. Sports and games are good discipline for the temper, and with all the severe handling that players must give each other in some of them, very seldom is the code of sportsmanship ignored or abused. Today the games require a high type of mental and physical efficiency and demand individual and team play, involving the keenest foresight, instinct, accuracy and speed, to such a degree that persons of the highest intellectual caliber find a stimulation and fascination both in playing and watching the game. The strictest temperance and attention to physical well-being is absolutely requisite for the best efficiency of the players. Tobacco and intoxicants, drugs and immoderate indulgence even in food must be avoided. Perfect health is the watchword of all athletic devotees and such being the condition of the physical system by means of careful regimen and common-sense living, it is not strange that every part of the system responds to the stimulus of invigorating exercise, the essential nature of every sport. The young, knowing what this temperate and prudent living accomplishes for the professional, become naturally careful in their habits so as to attain the greatest efficiency and win victory for their team.

Baseball.—In catching, throwing, batting, in all the features of a baseball game there is abundant exercise of the principal muscles. There is nearly continual motion for the members of the team that is out and for the base runners, as no player today can stay long in the same spot, since each must run up on grounders, run under flies, jump or reach for them, and base runners must be always stealing off and tempting the pitcher to throw, and the running itself is exercise most strenuous and exacting. It is a game that develops chest and arm muscles in batting and throwing, especially in the method of snapping the thrown ball out from the front without swinging the arm, as if it was pushed out violently, which is the only quick way to throw. The muscles of the legs are developed by running and all the muscles of the body are exercised in one way or another, even the fingers. The mental activity that is necessary to play a snappy ball game, to take every chance that opens, and to work out clever combinations is as beneficial, if the game is well played from start to finish, as many a school recitation. When two baseball teams develop clever head work in a game there is keen mental reaction in all the players and spectators; and when such a game is finished all separate with a strong feeling of mental exhilaration. The young, under the stimulation of such playing, are enthusiastic in their games, so that the general benefit from this sport is beyond computation. There is no doubt whatever that our country must credit baseball with much of the vigor that we as a people have. Without this sport so generally played, our showing in the time of the Great War, when so many men were found deficient physically and unfit for war, would have been far more humiliating. Since that time a new interest in sports and physical education has become prevalent and baseball, as one of the important means for physical training, is receiving its share of attention.

Football.—This game is more active and violent than baseball, calling for more rugged physique and endurance. For hardening a frame that is able to endure severe exertion and rough handling, nothing can be better; it will make the strong stronger, the quick more agile and the hard sinewed more enduring; but for a boy or young man who is possessed of any physical weakness, football is a sport to avoid. The tackling, the most important feature of the game, demands and develops quickness of act and judgment, a hardness of muscle and frame, a dauntlessness of spirit and strength of sinew very seldom required in any of our games. The runner must throw himself bodily against his opponent, like a missile, so as to strike the latter between the waist and the knees with the shoulder forward and at the same time clasp him about the limbs. The player must launch himself through the air with unerring judgment. All this calls for great muscular exertion. Running with the ball and dodging cannot be equaled for all-round exercise. The sudden start, quick and agile turn, the clairvoyant instinct to foresee an opponent's moves and cleverness to evade them; this training and development of lung and leg power will create bodily efficiency like nothing else, provided, of course, there is the necessary physical stamina to endure the strain. The strong, quick and subtle plays, the aggressive action of the linemen bring out the powers of body and mind. The football rules say, "A line that does not get the 'jump' on their opponents is not likely to open many holes in the line through which their backs may gain. . . . The success of the team depends almost entirely upon the speed and power of the charge of the linemen." Those at the back of the team in the play have their share of this upbuilding exercise, in all the moves they are called upon to perform, as falling on the ball, passing, kicking, catching and carrying the ball. A word upon the different types of players, guards, tackles and ends. As their titles imply they must exercise themselves so as to acquire the liveliest catlike agility, powerful concentration of muscle and the keenest foresight. The whole team is kept mentally alert by the principles and rules of the game and especially by the specific direction of the leader as he calls out the signal numbers, which are the secret code of procedure, the future moves of the game. Perhaps the best results of football, in a word, are the strengthening of lung power and the hardening and rendering agile of a frame already strong and muscular.

Soccer or Association Football.—This game is played with a round ball which may be kicked by any part of the foot or instep and struck by any portion of the body even the front or side of the head, but cannot be held or carried in the hands. It is a Scotch game like Golf and Curling. There is not so much violent activity in this game as in Rugby football, but it gives physical training of the highest class, especially in agility, quickness and keen perception rather than in the strategy of sheer strength. It is an intermediate phase in physical training between baseball and football. The game calls for great self-control and quick and keen judgment. Douglas Stewart, the recognized authority in soccer, says, "Playing a game is primarily for the physical benefit derived from the physical and mental activity inherent in the playing. . . . It is not the object of any sport or game to damage an opponent, but rather to defeat him by a higher degree of skill, with the feet in the soccer game and greater mental activity."

Basketball.—There is a wide interest in the game of basketball since it may be played out of doors or inside and is suited for both the male and the female sex. Thus it is an all-round game and good for any season of the year. It has become quite popular in schools and colleges and as a means of exercise it cannot be equalled in many respects, since it is not so severe as to injure seriously, like the rough tackling games. It calls into action all parts of the body in a varied and continuous struggle. The games played by men and women differ somewhat, but the nature and general method is the same in both. The ball is passed from one player to another; the purpose of each team is to score as many points as possible by tossing the ball into its own basket and at the same time prevent the other team from securing possession of the ball or scoring and without holding, blocking, tripping, pushing, charging or committing any other form of unnecessary roughness, which is classed as a personal foul. It is a game worthy of all the popularity it has gained.

Tennis.—Championship contests in tennis are frequently bringing this game into public attention. No exercise can be better for women or girls, no work or play could more thoroughly develop concentration of attention, the control of the eye and sureness of motion in hand, foot and body, and a gradual development of the muscles of chest, arms, back and limbs. The game affords enough exercise to stimulate these muscles aided by fresh air and sunlight, but the practice in self-control, self-adjustment, and quick and sure judgment is the chief benefit. The player must carry the score in mind to a certain extent, another act of close attention. The foot work of the game is of great consequence and with jumping for high and wide balls is greatly conducive to healthful bodily vigor, especially of girls and young ladies. The constant change from back of the base line to a position near the net keeps the player in continual motion, aside from that required with the racket and ball. Miss Florence Balin, a well-known tennis authority, says: "It requires a quick eye, level head, and ready muscular response to make a good net player. Practice at the net, therefore, helps one's other strokes, through the deftness and agility required. . . . The game is one of maneuvering until one side or the other is drawn into such a position that the ball is out of reach or very difficult to return." A constitution invigorated by such exercise of the whole being must be a great asset for health.

Archery.—Although this is not looked upon as an athletic game, it affords excellent means for exercising the muscles of the chest, back and arms and trains the nerves, the eye and the judgment. The loosing of the arrow, as it is called, depending upon the steady muscular release of the string by the three drawing fingers of the right hand, demands a peculiar skill and requires some study and practice to reach entire success. The bow and the arrow are used also in hunting even in shooting birds upon the wing. Such game as ducks, squirrels, rabbits and even quail have been brought down in this manner.

Volley Ball.—This game is growing in popularity and its beneficial features have made it highly attractive in institutions where exercise is managed in accordance with health principles. Geo. J. Fisher, M.D., says in regard to it: "From a simple informal game it is becoming one requiring increasing skill, speed and alertness, therefore it is now a game which in its informality can be played without training and by all and yet, in its more expert aspects, provides appeal to the most skillful." The game is adapted to the amusement of boys, men, girls or women, so that it has a very wide application. A scientific form called intensive volley ball is becoming quite popular in the higher schools.

Handball.—This is a game of very active, though not vigorous, exercise including all parts of the body; but especially the arms, chest, back and lungs. Anyone who regards the photographs of champion handball players will be struck with the great development in the muscles of the upper arm. Mr. James J. Brokaw, the handball expert, says: "The game of American handball, which supplies all the elements inseparable from keen competition, affords incidental physical exercise of the most diversified kind and possesses the very important feature that it can be made available where no other game can be played and at a minimum of expense."

Golf.—This game of Scotland has acquired great popularity in our country and is enjoyed by old and young and by both sexes, but appeals especially to the elderly. It calls out many faculties and employs the use of many muscles. The game takes the player into the air and sunlight and the amount of walking involved is especially beneficial. The swinging of the clubs brings into action nearly all the muscular system. The upward swing of the club over the shoulder and down against the ball, then continuing up to the opposite shoulder forms a complete stroke. The ball launches out in a true and rapid motion. The feet are held fast in one place; the position of the knees varies with the full swing of the club; and the body turns upon the waist as on a pivot bringing into action the muscles of the abdomen and lumbar region; while the muscles of the head and shoulders have their part to perform, the arms and wrists are carried through the steady movements by their muscles and tendons. The eye must be fastened upon the ball, and remain fixed upon the spot where it lay before leaving the ground. This calls for much training and the enforcement of the habit of concentration. The different clubs require different swings and demand judgment in performing the motion for each. For persons who work in offices and are bound to daily confining tasks, an afternoon upon the golf links is a physical restorative which will keep in abeyance the medical practitioner and all his specifics.

Hockey.—This interesting game has been frequently played by boys under the name of *shinney*, using young saplings that have a thick root for the bend. A block, struck by these clubs between two lines of players, was forced to one end, the side accomplishing this feat winning the game. *Spalding's Field Hockey Guide* explains hockey as a means for physical training. "One of the first lessons of hockey is that it is a game of endurance and conservation of energy and control. . . . Coaches must realize that in hockey the mental and physical demands are great." It requires hours of practice to learn to drive accurately with the hockey stick and to hit a mark nearly without fail at fifteen yards. The body must be kept erect in this game and shots made accurately on the run. It is splendid exercise for girls and young women and is quite popular with them. Dribbling is another move, it is "not a hit, but a series of quick taps controlled by the wrist; it is done with body erect and running, requiring steadiness of hand and nerve." A lunge is a thrust that brings into action other parts of the body and is used to block a shot or pass; it employs a variety of muscles. The push pass is a stroke without the preliminary swing. The tackle is attacking an opponent's ball by the stick to get possession of it and dodging is hitting the ball to one side so as to baffle an opponent; they are moves that call for quick and clever motion. Fast and accurate passing are important; but above all, is the ability to promote team work by every means so that the general advance is continuous. These activities of mind and body make hockey a game deserving of wide familiarity and practice as an unexcelled means for physical development.

2. Ice Hockey.—This game requires a knowledge of skating enough to keep the balance readily, turn and start sharply, play and move speedily and the ability to handle the "puck" or block with the stick. Ice hockey is a fast and furious game and provides the best of exercise. The wing players of the team especially are driven most of the time and need good lung staying power and tireless mucles. Team work and ability to make brilliant individual moves and clever generalship are the features of the game. The leader who can foresee so as to lay out a course of strategy, will always lead the game. The game lends itself to this work admirably and is most excellent training in this respect.

Medicine Ball.—There are many individual exercises with the large ball used in this game. They develop and tone up the muscular system like gymnastics, but the presence of the ball adds an incentive and increases the efficiency of the movements. The course of the exercises is so designed that a great variety of action is employed and the whole system invigorated. Games also are played in groups of any number, so that the use of the ball becomes generally interesting and attractive. Mr. R. J. Roberts, a pioneer of physical culture, named it the medicine ball since it does in many cases all that medicine could accomplish, without the disastrous after effects.

Skating.—The scientific use of skating strokes and balance is a modern art. It has reached great perfection in Europe, where women and girls especially have become remarkably proficient. Women who have persisted in figure skating and become familiar with its fascinations understand its attractions and benefits and indoor rinks make this sport possible whenever there is winter weather. Muscular strength is not necessary, but the sport may be made either strenuous or gentle. Little girls have become phenomenally expert. Some women skate to reduce weight, others, strangely enough, to increase it. Moderately pursued it adds to the appetite and increases flesh; but vigorously persisted in, the sport will reduce surplus tissue, especially around the waist and hips. The physical perfection of professional skaters testifies to the great benefit this sport has for symmetrical muscular development. It is the chief practice of the beginner to skate on one foot, balancing as long as possible. Special high shoes are worn and the weight rests on the ball of the foot, the ankle being well supported. It is best, if possible, to learn with a competent teacher. Suppleness of the body is necessary, and is developed by skating. The body is held upright, the shoulders back, the knees are slightly bent and the arms carried high. Few exercises can be recommended for general physical benefit to compare with skating.

Swimming.—The definition of swimming given by Frank J. Sullivan, swimming instructor at Princeton, in *Spalding's Science of Swimming,* is: "Swimming, which is simply locomotion added to floating, is founded on confidence, nerve and self-control with a comparatively small amount of muscular effort, if proper co-ordination of arms and legs is used. . . . It is the solemn duty of every man and woman to learn to swim and if all parents see to it that their children learn to swim, they are only doing their duty. In most cases it is both a life insurance and a means of enjoyment to the end of life." There is hardly a principal muscle that swimming does not affect and it also strengthens the lungs. The breast stroke is an unequaled exercise for chest and general body development. The side stroke is frequently taught beginners since it is the basis of many other strokes and with the so-called scissors kick makes a rapid and easy movement, not laying too great demand upon any one part of the body. Any stroke will give invaluable exercise and insure great physical benefit.

Lacrosse.—This was the first game played on the American continent, being an Indian sport found here by the first settlers. It was the first intercollegiate sport played in America. It is the national game of Canada. It is now popular in several countries of Europe. The Indians played it on a vast scale on a field from one to several miles in length, whole tribes being involved. It was a severe test of endurance and fortitude. The modern field is about like that of football with twelve players on a side. The ball may be kicked, knocked or tossed by a player. In *Spalding's Official Lacrosse Guide* is this statement: "Lacrosse has similarities to several other games . . . and is, in fact, the parent source from which many ideas were secured for the development of field hockey, ice hockey and basket ball."

Boxing.—The all-round exercise of boxing has always recommended it to sport lovers and those looking for a rapid and sure method for developing the muscles of the body. Mr. Frank F. O'Neill, a boxing authority, writes: "One of the prime essentials to success in the boxing ring is clever and strategic use of the feet." It is by skilful use of the feet that the dodging of opponent's blows are accomplished when they are allowed to pass over the shoulder. The sport calls for resourcefulness, instinct and muscle. Keen thought and quick wits are the essential equipments of the pugilist, and the sport throughout brings forth generalship and judgment. It develops grit and self-control like nothing else. Mr. O'Neill says: "Learn to set your teeth and keep everlastingly at it. . . . Punishment helps to make boxing the splendid sport that it is. A man learns to restrain himself under trying circumstances and consequently his self-possession in other walks of life become stronger also . . . besides, he will obtain a physical hardihood which will always stand him in good stead." The motions in defense, some of them blows to meet a blow, others blockings or dodgings, all keep the muscles active. Feinting trains the judgment and the arms and requires a keen perception and clear foresight of your opponent's purpose. All these movements of offense and defense are very active and demand not only rapidity of movement, but all the strength the boxer has, so that the exercise in all respects is remarkably effective in developing the physique. The boxers who have lived the most temperate and careful lives have endured the longest. The gauging of distance is equally beneficial in training the eye and judgment and in keen analysis of a physical evidence or possibility. Mr. O'Neill also says, "While it is certain that no other form of competitive sport provides the all-round physical exercise gained in boxing, as a matter of fact, its greatest asset is a mental one." The United States government instituted courses of boxing in the camps, which showed great benefit in all the men from officers down to the ranks. In *Spalding's Boxing Guide* over fifty different maneuvers are pictured which shows what mental effort is necessary to master thoroughly the details of this sport.

Wrestling.—The words of an authority upon wrestling, Frederick R. Toombs, apply very well to our viewpoint of sports. He says, "The wrestling art in its many branches has conferred many notable favors on the human race. An unequaled pastime, an unsurpassed means of self-defense, a developer par excellence of the body, and an unfailing aid to health, surely wrestling should be awarded the favor shown to a trusted, time-honored, faithful friend." The sport, like those of the rougher type, requires a sturdy physique and sound body and organs. The four requisites of wrestling are: Strength, quickness, skill and thoughtful attention. Geo. Bothner, the world's lightweight champion, says: "Any youth above the age of fourteen or fifteen possessing a sound constitution, desiring to take up a course of valuable athletic exercise, cannot do better than to study wrestling. Besides being one of the most ancient of athletic sports, it is also one of the finest for developing the physical and mental qualities of a man. All the muscles of the body are brought into play in a thorough manner, and the very nature of the sport induces quickness of eye, followed by instant and quick co-operative action of mind and body." Gymnastic exercise with weights, dumb bells, etc., is important to tone up the muscles for this violent and continued struggle. Endurance is a very important item in a wrestler's makeup, as a match may last over an hour, most of the time both contestants using their utmost powers.

Space forbids a treatment of other interesting and valuable games and sports, all more or less health aiding, such as cricket, curling—another Scotch game—roque, croquet, quoits—which can be played with old horseshoes—bowling, squash, and also might be added camping, fishing and hunting, all of them yielding great physical benefits.

Book XX

DICTIONARY OF DRUGS

LATIN	ENGLISH
Absinthium	Absinthium
Acacia	Acacia (Gum-arabic)
Aceta	Vinegars
Acetanilidum	Acetanilide
Acetum	Br. Vinegar
Acetum opii	Vinegar of opium
Acetum scillæ	Vinegar of squill
Acidum aceticum	Acetic acid
Acidum arseniosum	Arsenious acid
Acidum benzoicum	Benzoic acid
Acidum boricum	Boric acid
Acidum carbolicum	Carbolic acid
Acidum chromicum	Chromic acid
Acidum citricum	Citric acid
Acidum gallicum	Gallic acid
Acidum hydrobromicum dilutum	Diluted hydrobromic acid
Acidum hydrochloricum	Hydrochloric acid
Acidum hydrocyanicum dilutum	Diluted hydrocyanic acid Prussic acid
Acidum lacticum	Lactic acid
Acidum nitricum	Nitric Acid
Acidum nitro-hydrochloricum	Nitro-hydrochloric acid
Acidum oleicum	Oleic acid
Acidum oxalicum	Oxalic acid
Acidum phosphoricum	Phosphoric acid
Acidum salicylicum	Salicylic acid
Acidum sulphuricum	Sulphuric acid
Acidum sulphurosum	Sulphurous acid
Acidum tannicum	Tannic acid
Acidum tartaricum	Tartaric acid
Aconitina	Aconitine
Aconiti folia	Aconite leaves
Aconitum	Aconite
Adeps	Lard
Adeps lana hydrosus	Lanoline
Aether	Ether
Alcohol	Alcohol
Allium	Garlic
Aloe	Aloes
Aloe barbadensis	Barbadoes aloes
Aloin	Aloin

LATIN	ENGLISH
Althæa	Althæa, marshmallow
Alumen	Alum
Aluminii sulphas	Sulphate of aluminum
Ammoniacum	Ammoniac
Ammonii benzoas	Benzoate of ammonium
Ammonii bromidum	Bromide of ammonium
Ammonii carbonas	Carbonate of ammonium
Ammonii chloridum	Chloride of ammonium
Ammonii iodidum	Iodide of ammonium
Ammonii nitras	Nitrate of ammonium
Ammonii phosphas	Phosphate of ammonium
Ammonii sulphas	Sulphate of ammonium
Ammonii valerianas	Valerianate of ammonium
Amygdala amara	Bitter almond
Amygdala dulcis	Sweet almond
Amyl nitris	Nitrite of amyl
Amylum	Starch
Amylum iodatum	Iodized starch
Anisum	Anise
Anthemis	Anthemis chamomile
Antimonium	Antimony
Antimonii et potassii tartras	Tartar emetic. Tartrate of antimony and potassium
Apocynum	Apocynum. Canadian Hemp
Apomorphinæ hydrochloras	Hydrochlorate of apomorphine
Aqua	Water
Aqua chlori	Chlorine water
Aqua auranti flor.	Orange flower water
Aqua ammoniæ	Hartshorn
Aqua calcis	Lime water
Argentum	Silver
Argenti nitras	Nitrate of silver

Latin	English
Aristolochia serpentaria	Snakeroot
Armoraceæ radix	Horse-radish root
Arnicæ flores	Arnica flowers
Arnicæ radix	Arnica root
Arsenium	Arsenic
Asafœtida	Asafetida
Asclepias	Asclepias (Pleurisy Root)
Aspidium	Aspidium (Male fern)
Aspidosperma	Quebracho
Atropa belladonna	Deadly nightshade
Aurantii amara	Bitter orange
Auranti cortex	Orange peel
Aurantii dulcis	Sweet orange
Auri et sodii chloridum	Chloride of gold and sodium
Avenæ farina	Oatmeal
Avena sativa	Oats
Balsamum peruvianum	Balsam Perú
Balsamum tolutanum	Balsam Tolu
Barium	Barium
Berbinæ sulphas	Sulphate of berbine
Belladonnæ folia	Belladonna leaves
Belladonnæ radix	Belladonna root
Benzinum	Benzine
Benzoinum	Benzoin
Bismuthi citras	Citrate of bismuth
Bismuthi et ammonii citras	Citrate of bismuth and ammonium
Bismuthum	Bismuth
Bromum	Bromine
Bryonia	Bryonia (Bryony)
Buchu	Buchu
Butyrum	Butter
Caffea	Coffee
Caffeina	Caffeine
Calamina præparata	Prepared calamine
Calamus	Calamus (sweet flag)
Calcis chloridum	Chloride of lime
Calcium carbonas precip.	Precipitate of chalk
Calendula	Calendula (Marigold)
Calumba	Calumba (Columbo)
Calx	Lime
Cambogia	Gamboge
Camphora	Camphor
Cannabis	Hemp
Cantharis	Cantharides (Spanish flies)
Capsicum	Capsicum
Carbo	Carbon
Carbo animalis	Animal charcoal
Carbo ligni	Charcoal
Cardamomum	Cardamomum
Carum	Caraway
Caryophyllus	Cloves
Cascarilla	Cascarilla
Cassia fistula	Cassia (Senna)
Castanea	Chestnut
Cataplasmata	Cataplasms
Catechu	Catechu
Caulophyllum	Blue cohosh
Cephælis ipecacuanha	Ipecac
Cera alba	White wax
Cera flava	Yellow wax
Cerata	Cerates
Cerevisiæ fermentum	Bur yeast
Cerii oxalas	Oxalate of Cerium
Cetaceum	Spermaceti
Cetraria	Iceland moss
Chelidonium	Celandine
Chenopodium	American wormseed
Chimaphila	Pipsissewa
Chinoidinum	Chinoidin (Quinoidin)
Chloral	Chloral (Hydrate of chloral)
Chloroformi	Chloroform
Chondrus	Irish moss
Chrysarobinum	Chrysarobin
Cimicifuga	Black snakeroot
Cinchona	Peruvian bark
Cinchonina	Cinchonine (Cinchonia)
Cinnamomum	Cinnamon
Cocainæ hydrochloras	Hydrochlorate of cocaine
Coccus	Cochineal
Codeina	Codeine (Codeia)
Colchisi radix	Colchicum root
Colchisi semen	Colchicum seed
Collodium	Collodion
Colocynthis	Colocynth
Conium	Hemlock
Convolvulus jalapa	Jalap
Copaiba	Copaiba (Balsam of Copaiba)
Coriandrum	Coriander
Cornus	Dogwood
Creosotum	Creosote
Creta	Chalk
Crocus	Saffron
Cubeba	Cubebs
Cuprum	Copper
Cupri sulphas	Bluestone
Cydonium	Quince seed
Cypripedium	Ladies' slipper
Datura stramonium	Thorn apple
Digitalis	Foxglove
Dulcamara	Bitter sweet
Elaterinum	Elaterin
Elaterium	Elaterium
Ergota	Ergot (Ergot of rye)
Erythroxylon	Coca
Eucalyptus	Eucalyptus
Euonymus	Wahoo
Eupatorium	Thoroughwort (Boneset)
Farina tritici	Wheaten flour
Fel bovis	Ox gall
Ferri citras	Citrate of iron
Ferri et quinia citras	Citrate of iron and quinine

Latin	English
Ferri ferrocyanuretum	Prussian blue
Ferri sulphas	Green vitriol
Ferrum	Iron
Ficus	Fig
Foeniculum	Fennel
Frangula	Buckthorn
Galbanum	Galbanum
Galla	Nutgall (Galls)
Gaultheria	Wintergreen
Gelsemium	Yellow jasmine
Gentiana	Gentian
Geranium	Cranesbill
Glycerinum	Glycerin
Glycyrrhiza	Liquorice root
Gossypii radicis cortex	Cotton root bark
Gossypium	Cotton (Purified cotton. Absorbent cotton)
Granatum	Pomegranate
Grindelia robusta	Grindelia
Guaiaci lignum	Guaiacum wood
Guaiaci resina	Guaiac
Guarana	Guarana
Gutta-percha	Gutta percha
Hæmatoxylon	Logwood
Hamamelis	Witchhazel
Hedeoma	Pennyroyal
Hordium decorticatum	Pearl barley
Humulus	Hops
Hydrargyri chloridum corrosivum	Corrosive chloride of mercury (Corrosive sublimate. Mercuric chloride)
Hydrargyri chloridum mite	Mild chloride of mercury (Calomel. Mercurous chloride)
Hydrargyri cyanidum	Cyanide of mercury
Hydrargyri iodidum rubrum	Red iodide of mercury
Hydrargyri iodidum viride	Green iodide of mercury
Hydrargyri oxidum flavum	Yellow oxide of mercury
Hydrargyri oxidum rubrum	Red oxide of mercury
Hydrargyri persulphas	Persulphate of mercury
Hydrargyri subsulphas flavus	Yellow subsulphate of mercury
Hydrargyri sulphidum rubrum	Red sulphide of mercury
Hydrargyrum	Mercury (quicksilver
Hydrargyrum ammoniatum	Ammoniated mercury White precipitate Mercurammonium chloride
Hydrargyrum cum creta	Mercury with chalk
Hydrastis	Golden seal
Hyoscyamus	Henbane

Latin	English
Ichthyocolla	Isinglass
Ignatia	Bean of St. Ignatius
Illicium	Star anise
Inula	Elicampane
Iodoformum	Iodoform
Iodum	Iodine
Ipicacuanha	Ipecac
Iris	Blue flag
Jalapa	Jalap
Juglaus	Butternut
Juniperus	Juniper
Kamala	Kamala
Kino	Kino
Krameria	Rhatany
Lac	Milk
Lactuca	Lettuce
Lactucarium	Lactucarium
Lappa	Burdock
Laricis cortix	Larch bark
Lauro-cerasi folia	Cherry laurel leaves
Laurus camphora	Camphor
Lavandula	Lavendar
Leptandra	Culver's root
Limonis	Lemons
Limonis cortex	Lemon peel
Limonis succus	Lemon juice
Linum	Flaxseed
Lini farina	Flaxseed meal
Linium Usitatissimum	Flaxseed
Liquor calcis	Lime water
Liquor plumbi subacetate	Lead water
Lithii benzoas	Benzoate of lithium
Lithii bromidum	Bromide of lithium
Lithii carbonas	Carbonate of lithium
Lithii citras	Citrate of lithium
Lithii salicylas	Salicylate of lithium
Lobelia	Lobelia
Lotio hydrargyri nigra	Black wash
Lupulinum	Lupulin (lupulinic glands)
Lycopodium	Lycopodium
Macis	Mace
Magnesia	Magnesia (light magnesia)
Magnesia sulphas	Epsom salts
Magnolia	Magnolia
Maltum	Malt
Mangani oxidum nigrum	Black oxide of manganese
Mangani sulphas	Sulphate of manganese
Manna	Manna
Maranta arundinacea	Arrow root
Marrubium	Horehound
Massa hydrargyri	Blue mass pill
Mastiche	Mastic
Matico	Matico
Matricaria	German chamomile
Mel	Honey
Melissa	Balm
Menispermum	Canadian moonseed
Mentha piperita	Peppermint

LATIN	ENGLISH
Mentha puligiun	Pennyroyal
Mentha viridis	Spearmint
Menthol	Menthol
Menthol salicylis	Menthol Salicylate
Mezereum	Mezereum
Mica panis	Crumb of bread
Mistura creta	Chalk mixture
Mori succus	Mulberry juice
Morphina	Morphine
Moschus	Musk
Myristica	Nutmeg
Myrrha	Myrrh
Narthex asafoetida	Asafetida
Nectandrae cortex	Nectandra, beeberu bark
Nux vomica	Nux vomica
Oleum adipis	Lard oil
Oleum amygdalae	Oil of almonds
Oleum caryophylli	Oil of cloves
Oleum cubebae	Oil of cubebs
Oleum gaultheria	Oil of wintergreen
Oleum morrhuae	Cod-liver oil
Oleum olivae	Sweet oil
Oleum ricini	Castor oil
Oleum terebinthinae	Turpentine
Oleum tiglium	Croton oil
Opium	Opium
Origanum	Wild marjoram
Os ustum	Bone ash
Ovi albumina	Egg albumin
Ovi vitellus	Yolk of eggs
Papaveris capsula	Poppy capsules
Papaveris somniferum	Poppy-heads
Parafferium durum	Hard paraffin
Pareira	Pareira brava
Pepo	Pumpkin seed
Pepsinum saccharatum	Saccharated pepsin
Petrolatum	Petroleum ointment
Phosphorus	Phosphorus
Physostigma	Calabar bean
Physostigmina	Physostigmine
Phytolaccae	Poke berry
Phytolaccae radix	Poke root
Picrotoxinum	Picrotoxin
Pigmentum indicum	Indigo
Pilocarpus	Jaborandi
Pilulae masse hydrargyri	Blue-mass pill
Pimenta	Allspice
Piper	Pepper (black pepper)
Piperina	Piperine
Pix	Pitch
Pix liquida	Tar
Plumbi acetas	Sugar of Lead
Plumbum	Lead
Podophyllum	May-apple
Potassii bitartras	Cream of tartar
Potassii nitras	Saltpetre
Potassium	Potassium
Potassa	Potassa
Prinos	Black alder
Prunum	Prune
Prunus virginiana	Wild-cherry
Pulsatilla	Pulsatilla
Pulv Ipecac et opii	Dover's powders
Pyrethrum	Pellitory
Pyroxylinum	Soluble gun cotton
Quassia	Quassia
Quercus alba	White oak
Quercus cortex	Oak bark
Quercus infectoria	Nutgalls
Quillaia	Soap bark
Quinidinae sulphas	Sulphate of quinidine
Quinina	Quinine
Resina	Resin
Rhamni purshiani cortex	Sacred bark Chittim bark Cascara sagrada
Rhus	Rhubarb
Rhus glabra	Rhus glabra; oak
Rhus toxicodendron	Rhus toxicodendron
Rosa centifolia	Pale rose
Rosa gallica	Red rose
Rosmarinus	Rosemary
Rubus	Blackberry
Rubus Idaeus	Raspberry
Rumex	Rumex
Sabadilla	Cevadilla
Sabina	Savine
Saccharum	Sugar
Saccharum albe	White sugar
Saccharum lactis	Sugar of milk
Sagus rumphii	Saco
Salicinum	Salicin
Salix	Salix
Salvia	Salvia
Sambucus	Elder
Sanguinaria	Bloodroot
Santalum rubrum	Red saunders
Santonica	Levant wormseed
Santoninum	Santonin
Soap	Soap
Sarsaparilla	Sarsaparilla
Sassafras	Sassafrass
Sassafras medulla	Sassafrass pith
Scammonium	Scammony
Scilla	Squill
Scoparius	Broom
Scutellaria	Scullcap
Senega	Senega
Senna	Senna
Serpentaria	Virginia snakeroot
Sevum	Suet
Sinapis	Mustard
Sinapis alba	White mustard
Sinapis nigra	Black mustard
Smilax Officinale	Sarsaparilla
Sodii biboras	Borax
Sodii bicarbonas	Baking soda
Soda	Soda
Solanium dulcamara	Bitter sweet
Spigelia	Pinkroot
Spiritus frumenti	Whiskey
Spiritus vini gallici	Brandy

Latin	English
Staphisagria	Stavesacre
Stillingia	Queen's root
Stramonii folia	Stramonium leaves
Sodii chloridum	Salts
Sodii et Potassi tartras	Rochelle salts
Sodii phosphas	Phosphate of soda
Sodii sulphas	Glauber salts
Stramonii semen	Stramonium seed
Strychina	Strychnine
Styrax	Styrax
Sulphuris iodidum	Iodide of sulphur
Sulphur lotum	Washed sulphur
Sulphur praecipitatum	Precipitated sulphur
Sulphur rotundum	Brimstone
Sulphur sublimatum	Sublimed sulphur
Sumbul	Sumbul
Syrupus acaciae	Syrup of gum arabic
Syrupus acidi citrici	Syrup of citric acid
Syrupus acidi hydriodici	Syrup of hydriodic acid
Syrupus allii	Syrup of garlic
Syrupus althææ	Syrup of althæa
Syrupus amygdala	Syrup of almond Syrup of orgeat
Syrupus aurantii	Syrup of orange
Syrupus aurantii florum	Syrup of orange flowers
Syrupus calcii lactophosphatis	Syrup of Lactophosphate of calcium
Syrupus ferri bromidi	Syrup of bromide of iron
Syrupus ferri iodidi	Syrup of iodide of iron
Syrupus ferri phosphatis	Syrup of phosphate of iron
Syrupus ferri quininae	Syrup of the phosphates of iron
Quinina et strychinae phosphatum	Quinine and strychnine
Syrupus hypophosphitum	Syrup of hypophosphites
Syrupus hypophosphitum cum ferro	Syrup of hypophosphites with iron
Syrupus ferri quininae et strychinae phosphatum	Syrup of the phosphates of iron, quinine and strychnine
Syrupus ipecacuanhae	Syrup of ipecac
Syrupus krameriae	Syrup of krameria
Syrupus lactucarii	Syrup of lactucarium
Syrupus limonis	Syrup of lemons
Syrupus mori	Syrup of mulberries
Syrupus papaveris	Syrup of poppies
Syrupus picis liquidae	Syrup of tar

Latin	English
Syrupus pruni Virginianae	Syrup of wild-cherry
Syrupus rhus	Syrup of rhubarb
Syrupus rhus aromaticus	Aromatic Syrup of rhubarb
Syrupus rosae	Syrup of rose
Syrupus rubi	Syrup of blackberry
Syrupus rubi idaei	Syrup of raspberry
Syrupus sarsaparilla compositus	Compound syrup of sarsaparilla
Syrupus scillae	Syrup of squill
Syrup scillae compositus	Compound syrup of squill
Syrupus senegae	Syrup of senega
Syrupus sennae	Syrup of senna
Syrupus tolutanus	Syrup of tolu
Syrupus zingiberis	Syrup of ginger
Tabacum	Tobacco
Tamarindus	Tamarind
Tanacetum	Tansy
Taraxacum	Dandelion
Terebinthina	Turpentine
Theobroma cacao	Chocolate
Theriaca	Treacle (molasses)
Thuja	Arbor vitae
Thymol	Thymol
Tinctura opii	Laudanum
Tinctura opii camphorata	Paregoric
Tragacantha	Tragacanth
Triticum	Couch-grass
Ulmus	Elm (slippery elm)
Ustilago	Corn smut
Uvae	Raisins
Uva ursi	Bearberry
Valeriana	Valerian
Vanilla	Vanilla
Veratrina	Veratrine
Veratrum viride	American hellebore
Viburnum	Black haw
Viburnum opulus	Cramp bark
Vinum album	White wine
Vinum rubrum	Red wine
Vina medicata	Medicated wines
Viola tricolor	Pansy
Vitellus	Yolk of egg
Xanthoxylum	Prickly ash
Zincum	Zinc
Zinci acetas	Acetate of zinc
Zinci Chloridum	Chloride of zinc
Zinci iodidum	Iodide of zinc
Zinci oxidum	Oxide of zinc
Zinci sulphas	Sulphate of zinc
Zingiber	Ginger

TABLE OF MEDICINES AND DOSES

No fixed rule can be applied to dosage for various reasons. Primarily because one individual may be more readily affected by drugs than another, or the drugs may be so antagonized by the disease process as to render very large doses necessary. Therefore, dosage must be varied to suit the case, and taking into consideration age and sex.

The following table gives a full list of medicines ordinarily used, with their properties and the doses suitable for adults. The dose for a child may be determined, excepting in a few dangerous medicines, by this rule: *Add twelve to the child's age in years and divide the sum by the child's age. The quotient shows what proportion of the dose for an adult is to be used.* Thus:

Child's age in years	6
Add	12
Divide by child's age	6)18(3

and the dose for a child of six years is found to be one-third of the dose for an adult. This rule is not a law, however, for of narcotics children should receive less than this (one-half), and of purgatives or laxatives more than this (say two or three times).

Medicines and Properties.	Doses.
Acetanilid; febrifuge, anodyne	1 to 5 grains
Aconite root, tincture of; narcotic, sedative and nauseant	1 to 3 drops 3 times a day
Aloes socotrine, powdered; purgative	5 to 10 grains
Aloes socotrine, pills of; purgative	2 to 3 pills at bedtime
Aloes socotrine, tincture of; purgative	1 to 3 drams at bedtime
Aloes and myrrh, tincture of; emmenagogue	1 to 2 teaspoonfuls 2 or 3 times a day
Aloes and myrrh, pills of; emmenagogue	3 or 4 pills twice a day
Alum, powdered; astringent and emetic	3 to 30 grains
Alum, burned; escharotic	10 to 15 grains moistened with water applied externally
Ammonia, carbonate of; stimulant	5 to 6 grains every 2 to 4 hours
Ammonia, water of (spirits of hartshorn); stimu. and caustic	8 to 12 drops diluted with water.
Ammonia aromatic, spirits of; stimulant	10 to 20 drops diluted in water
Ammonia liniment (volatile); rubefacient	applied externally

Medicines and Properties.	Doses.
Ammoniac mixture; expectorant	tablespoonful 3 or 4 times a day
Ammonium chloride; expectorant	5 to 10 grains
Angelica root, fluid extract of; stimulant and aromatic	teaspoonful 3 or 4 times a day
Angelica root, decoction of; stimulant and aromatic	wineglassful 2 to 4 times a day
Anise-seed, essence of; aromatic and carminative	1 to 2 teaspoonfuls
Antimonial wine; emetic	2 to 3 teaspoonfuls
Antipyrine; febrifuge	3 to 5 grains
Arrowroot, Bermuda; nutritive and tonic	as a gruel
Arsenic, Donovan's compound solution of; alternative	5 to 10 drops 3 times a day
Arsenic, Fowler's solution of; alternative and febric	1 to 5 drops 3 times a day
Asafetida, pills of; anti-spasmodic	1 to 2 pills
Asafetida, milk of; anti-spasmodic	to 2 teaspoonfuls
Asafetida, tincture of; anti-spasmodic	25 to 40 drops
Balsam of copaiva; diuretic, laxative and stimulant	20 to 30 drops 3 times a day
Balsam of fir; diuretic	10 to 15 drops
Balsam of Peru; stimulant and tonic	5 or 10 drops twice a day
Balsam of tolu, tincture of; stimulant and tonic	20 to 40 drops
Belladonna, tincture of; diaphoretic, diuretic and narcotic	3 to 5 drops
Belladonna, plaster of; anodyne and diaphoretic	applied externally
Belladonna, ointment of; anodyne	applied externally
Bismuth, subnitrate of; anti-spasmodic, absorbent, sedative	5 to 10 grains 3 times a day
Bitter sweet, fluid extract of; emetic and narcotic	30 to 40 drops 3 times a day
Black drop (vinegar of opium); narcotic	10 to 12 drops
Black cohosh, decoction of; narcotic, diaphoretic and diuretic	wineglassful 3 times a day.
Black cohosh, tincture of; narcotic, diaphoretic and diuretic	teaspoonful 3 or 4 times a day.
Blackberry root, decoction of; astringent and tonic	wineglassful 3 or 4 times a day
Blackberry root, fluid extract of; astringent and tonic	teaspoonful 3 times a day
Blackberry root, syrup of; astringent	tablespoonful 3 to 6 times a day
Blue vitriol; emetic	1 to 3 grains
Blue mass pills; alterative and sialagogue	1 or 2 pills (5 grains each)
Boneset, infusion of; stimulant, sudorific and emmenagogue	1 to 2 tablespoonfuls 3 or 4 times a day.
Boneset, fluid extract of; stimulant, sudorific and emmenagogue	30 to 40 drops 3 or 4 times a day.
Borax, powdered; nephitic and deterient	15 to 25 grains
Buchu, infusion of; diaphoretic and diuretic	tablespoonful 4 or 5 times a day
Buchu, fluid extract of; diaphoretic and diuretic	teaspoonful 3 or 4 times a day
Buckthorn, fluid extract of; hydragogue cathartic	teaspoonful at bedtime
Burdock, fluid extract of; herpetic anti-scorbutic	tablespoonful
Calomel; alterative and laxative	½ to 5 grains
Camphor, gum; anti-spasmodic and sedative	2 to 5 grains
Camphor, spirits of; anti-spasmodic and sedative	10 to 25 drops
Camphor, water of; anodyne and sedative	2 to 4 teaspoonfuls
Calamus root, fluid extract of; aromatic, stimulant and stomachic	teaspoonful
Caraway seed, infusion of; aromatic and carminative	tablespoonful
Cardamom seed, tincture of; aromatic and stimulant	1 to 2 teaspoonfuls
Cardamom, compound tincture of; stomachic	1 to 2 teaspoonfuls

Medicines and Properties.	Doses.
Cascara sagrada, fluid extract of; tonic laxative	10 to 30 drops
Catechu, powdered; astringent	15 to 30 grains
Catechu, tincture of; astringent	10 to 30 drops
Catnip, decoction of; diaphoretic, stomachic and corrective	tablespoonful
Cayenne pepper, powdered; stimulant	3 or 6 grains
Cayenne pepper, tincture of; stimulant	10 to 15 drops
Castor oil; purgative	1 to 2 tablespoonfuls
Chamomile flowers, cold infusion of; tonic and stomachic	1 to 2 tablespoonfuls 3 times a day.
Chalk, prepared; antacid and astringent	10 to 30 grains in mucilage
Chalk mixture; antacid and astringent	2 or 3 teaspoonfuls
Chloroform; narcotic and sedative	10 to 60 drops in mucilage
Chloroform, liniment of; anesthetic and anodyne	applied externally
Cinnamon, powdered; astringent and stomachic	5 to 15 grains
Cinnamon, oil of; astringent and stomachic	2 to 4 drops
Cinnamon, essence of; astringent and stomachic	20 to 25 drops
Cloves, powdered; aromatic, carminative and stimulant	10 to 15 grains
Cloves, oil of; stimulant, aromatic and carminative	1 to 5 drops
Colombo root, decoction of; tonic	tablespoonful 3 times a day
Colchicum root, wine of; narcotic, diuretic and sedative	10 to 30 drops 3 times a day
Colchicum seed, tincture of; narcotic, diuretic and sedative	10 to 30 drops 3 times a day.
Corrosive sublimate; antisyphilitic	1-60 to ⅛ grain 2 or 3 times a day
Cotton root, fluid extract of; emmenagogue, parturient and abortive	20 to 30 drops
Cream tartar; aperient and refrigerant	teaspoonful in water
Cubebs, powdered; stimulant and diuretic	20 to 30 grains
Cubebs, fluid extract of; stimulant and diuretic	20 to 30 drops
Cubebs, tincture of; stimulant and diuretic	1 to 2 teaspoonfuls
Cubebs, oil of; stimulant and diuretic	10 to 12 drops on sugar
Dandelion, fluid extract of; alterative, aperient, tonic and diuretic	1 to 2 teaspoonfuls
Dogwood bark, decoction of; tonic, astringent and stimulant	wineglassful 2 or 3 times a day.
Dover's powder; diaphoretic	5 to 15 grains at bed-time
Elder flower, decoction of; alterative, diaphoretic and diuretic	1 to 2 tablespoonfuls
Elm bark, infusion of; demulcent and diuretic	wineglassful
Epsom salts; cathartic	2 or 3 teaspoonfuls before breakfast
Ergot, powdered (fresh); astringent	15 to 30 grains
Ergot, fluid extract of; astringent	15 to 60 drops
Ergot, tincture of; astringent	1 teaspoonful
Ergot, wine of; astringent	1 teaspoonful
Fennel seed, infusion of; aromatic and carminative	tablespoonful
Fennel seed, oil of; aromatic and carminative	3 to 6 drops
Fever-root, decoction of; diuretic, cathartic and emetic	tablespoonful
Flaxseed, infusion of; demulcent	wineglassful every 3 or 4 hours
Flaxseed, poultice of; astringent	excellent for drawing
Flaxseed, oil and lime-water; astringent	applied to scalds and burns
Foxglove, powdered (digitalis); diuretic, narcotic and sedative	½ to 1 grain 2 or 3 times a day.
Foxglove, tincture of; diuretic, narcotic and sedative	5 to 15 drops 2 or 3 times a day

MEDICINES AND PROPERTIES.	DOSES.
Garlic, syrup of; expectorant	1 to 2 teaspoonfuls
Gaultheria, oil of (wintergreen); antirheumatic	2 to 10 drops
Gentian, tincture of; tonic	1 teaspoonful
Ginger, powdered; stimulant and carminative	20 to 30 grains
Ginger, tincture of; stimulant and carminative	15 to 30 drops
Glauber salts; aperient and cathartic	1 to 2 teaspoonfuls before breakfast
Gelsemium, fluid extract of; narcotic, sedative, diaphoretic and febrifuge	2 to 5 drops
Gelsemium, tincture of; narcotic, sedative, diaphoretic and febrifuge	5 to 10 drops
Gum arabic, mucilage of; demulcent	tablespoonful every 3 or 4 hours
Guaiacum, tincture of; diaphoretic and diuretic	teaspoonful 2 or 3 times a day
Hoarhound, decoction of; sudorific, pectoral, aperient and tonic	tablespoonful
Hoarhound, syrup of; sudorific and pectoral	tablespoonful
Hops, tincture of; nerve tonic and sedative	1 to 2 teaspoonfuls every 4 hours
Hydrastine (active principle of yellow root); astringent, tonic, stomachic, antibilious	1 to 2 grains.
Hypophosphites, syrup of; tonic	½ to 1 teaspoonful 3 times a day
Iodine, tincture of; alterative and discutient	applied to scrofulous tumors
Iodine, ointment of; discutient	applied to scrofulous tumors
Iron, carbonate (rust) of; tonic	5 to 10 grains
Iron, syrup of iodine of; alterative, diuretic and tonic	5 to 10 drops twice a day
Iron tincture, muriate of; tonic	10 to 30 drops
Irish moss, infusion of; nutritive, demulcent and expectorant	tablespoonful
Ipecac, powdered; emetic and diaphoretic	20 grains
Ipecac, fluid extract of; emetic and diaphoretic	20 to 25 drops
Ipecac, wine of; emetic and diaphoretic	1 to 2 teaspoonfuls
Ipecac, syrup of, emetic and diaphoretic	teaspoonful repeated
Jalap, powdered, cathartic	15 to 30 grains
Juniper berries, infusion of; diuretic	wineglassful 3 or 4 times a day
Lactucarium; anodyne	5 to 10 grains
Lady's-slipper root, decoction of; nervine	tablespoonful
Lead, acetate (sugar) of; astringent and sedative	1 to 3 grains every 3 or 4 hours
Lead, Goulard's extract of; anodyne and sedative	1 ounce diluted with 1 pint of water; applied externally to reduce inflammation.
Licorice root, decoction of; demulcent and expectorant	wineglassful
Life-everlasting, decoction of; astringent, diaphoretic, stomachic	1 to 2 tablespoonfuls
Liverwort, decoction of; astringent, demulcent and pectoral	1 to 2 tablespoonfuls
Lobelia herb, infusion of; emetic and diaphoretic	2 teaspoonfuls
Lobelia herb, powdered; emetic and diaphoretic	10 to 15 grains
Lobelia seed, tincture of; diaphoretic, emetic and expectorant	20 to 40 drops
Magnesia, carbonate; antacid and laxative	15 to 60 grains
Magnesia, calcined; antacid and laxative	15 to 60 grains
May-apple root, powdered; cathartic, hydragogue and emetic	15 to 20 grains at bedtime.
May-apple root, powdered; cathartic, hydragogue and emetic	15 to 20 grains at bedtime.
Manna; laxative	1 to 2 drachms before breakfast

MEDICINES AND PROPERTIES.	DOSES.
Manna, syrup of; laxative	1 to 2 tablespoonfuls before breakfast
Mercury with chalk; alterative	2 to 10 grains
Mercury, mass of (blue pill); cathartic	3 to 10 grains
Mercury, red precipitate ointment; stimulant	applied externally
Mercurial ointment (blue); resolvent, antiparasitic	applied externally
Morphine, sulphate of; anodyne and soporific	⅛ to ¼ grain
Mustard seed (black), ground; diuretic, emetic and stimulant	½ to 1 teaspoonful
Mustard seed (white), ground; diuretic, emetic and stimulant	wineglassful
Nitrate of silver (crystals); astringent, antispasmodic	1-6 to ¼ grain 2 or 3 times a day.
Nitrate of silver, lunar caustic (sticks); escharotic	applied externally
Nut-galls, tincture of; astringent	1 to 2 teaspoonfuls
Nut-galls, ointment of; astringent	1 to 2 teaspoonfuls
Nux vomica, tincture of; diuretic, excrement, stimulant and tonic	15 drops 3 times a day.
Nux vomica, fluid extract of; diuretic, excrement, stimulant and tonic	1 to 5 drops 2 or 3 times a day.
Paregoric; anodyne	1 to 2 teaspoonfuls
Pennyroyal, infusion of; diaphoretic, emmenagogue, stimulant	wineglassful every hour
Peppermint, infusion of; stimulant and carminative	wineglassful 2 or 3 times a day
Peruvian bark, powdered; febrifuge and tonic	1 drachm 2 or 3 times a day
Peruvian bark, decoction of; febrifuge and tonic	wineglassful 3 or 4 times a day
Peruvian bark, fluid extract of; tonic and febrifuge	30 to 60 drops 3 times a day
Pepsin, pure; digestant	15 to 60 grains
Pepsin, saccharated; digestant	30 grains to ½ ounce
Pepsin, liquor; digestant	2 to 4 teaspoonfuls
Phenacetine; antipyretic, antineuralgic	2 to 5 grains
Pinkroot, infusion of; anthelmintic	tablespoonful before meals
Pinkroot, fluid extract of; anthelmintic	½ to 1 teaspoonful before meals
Pinkroot and senna, fluid extract of; anthelmintic, purgative	teaspoonful before meals
Podophyllin (active principle of mandrake); diuretic, purgative	1 to 3 grains at bedtime.
Potash, chlorate	10 to 15 grains dissolved in water
Potash, citrate; refrigerant and diaphoretic	20 to 25 grains
Potash, nitrate (saltpetre); refrigerant and diaphoretic	6 to 12 grains
Potassium, bromide of; antiscorbutic, nerve sedative	5 to 60 grains
Potassium, iodide of; alterative and antisyphilitic	5 to 15 grains 3 times a day
Rochelle salts; aperient	2 to 3 drachms before breakfast
Rhatany root, decoction of; astringent and tonic	tablespoonful
Rhatany root, tincture of; astringent and tonic	teaspoonful
Rhubarb, powdered; astringent and cathartic	20 to 30 grains
Rhubarb, tincture of; astringent and cathartic	1 to 2 teaspoonfuls
Rhubarb, fluid extract of; cathartic and astringent	25 to 40 drops
Rhubarb, syrup of; cathartic and astringent	2 or 3 teaspoonfuls
Rue herb, decoction of; tonic, anthelmintic and emmenagogue	tablespoonful
Saffron (American), infusion of; diaphoretic	2 to 3 teaspoonfuls

MEDICINES AND PROPERTIES.	DOSES.
Saffron (Spanish), infusion of; diaphoretic	1 to 2 teaspoonfuls
Sage, infusion of; sudorific and stomachic	wineglassful
Sassafras pith, infusion of; demulcent and anodyne	1 or 2 teaspoonfuls; also applied to sore eyes.
Sassafras bark, infusion of, diaphoretic and stimulant	wineglassful every 2 or 3 hours
Sarsaparilla, decoction of, alterative and deobstruent.	teacupful 3 times a day
Sarsaparilla, fluid extract of; alterative and deobstruent	teaspoonful 3 times a day
Sarsaparilla, compound syrup of; alterative, deobstruent	tablespoonful 4 to 6 times a day.
Scammony; cathartic	5 to 15 grains at bedtime
Senega (snakeroot), fluid extract of; expectorant, stimulant and diuretic	5 to 20 drops
Senna, decoction of; cathartic	1 to 2 tablespoonfuls
Senna, fluid extract of; cathartic	1 to 4 teaspoonfuls
Stramonium leaves, tincture of; narcotic, sedative, antispasmodic	10 to 20 drops 2 or 3 times a day.
Stramonium leaves, ointment of; sedative	applied externally
Soda, bicarbonate, antacid	15 to 30 grains
Seidlitz powders; aperient	1 powder before breakfast
Sweet spirits of nitre; diaphoretic, diuretic and febrifuge	30 to 60 drops
Tansy (double), decoction of; sudorific, emmenagogue, anthelmintic	1 to 2 tablespoonfuls.
Thyme, infusion of; aromatic and stomachic	wineglassful
Uva ursa leaves, decoction of; diuretic and tonic	wineglassful 3 or 4 times a day
Uva ursa, fluid extract of; diuretic and tonic	½ to 1 teaspoonful 3 or 4 times a day
Waterpepper herb, tincture of; stimulant, diuretic and emmenagogue	teaspoonful
Wild cherry bark, cold infusion of; tonic, astringent, sedative	tablespoonful 3 times a day.
Wild cherry bark, syrup of; sedative	tablespoonful 3 times a day
Witch-hazel; anodyne, astringent, sedative, styptic	1 to 2 teaspoonfuls; also, externally to reduce inflammation.

GLOSSARY OR DICTIONARY

Giving definitions of all medical and technical terms contained in this work.

A

Abdomen (ab-do'men). The belly; the cavity in the body betwen the thorax and the pelvis.

Abdominal (ab-dom'in-al). Pertaining to the abdomen

Aberration (ab-er-a'shun). Deviation from the normal.

Abirritant **(ab-ir'it-ant). Allaying irritation.**

Ablution (ab-lu'shun). The process of cleansing the body.

Abnormal (ab-norm'al). Contrary to the natural law

Abolition (ab o lish'un). Complete suspension, as of a function

Abort (ab-ort') To miscarry; to arrest the development of a disease.

Abortion (ab-or'shun). Premature expulsion of a fœtus

Abortive (ab ort'iv) Prematurely born

Abrasion (a-bra'shun) A wearing off of the skin or mucous membrane

Absinthe (ab'sinth) A cordial containing oil of wormwood and aromatics

Absinthium (ab-sinth'um) Wormwood, cardiac stimulant and stomachic tonic

Absorbent (ab-sorb'ent) Taking up by suction, a drug that produces absorption of diseased tissue

Absorption (ab-sorp'shun). The inhibition of one body by another, as of the lens after rupture of the capsule.

Abstemious (ab-ste'me-ous). Moderate in matters of diet

Abstinence (ab'stin-ence). Voluntary privation of self-denial in diet.

Abstract (ab'strakt) A preparation containing the soluble principles of a drug evaporated and mixed with sugar of milk.

Abstraction (ab strak'shun). Blood letting

Acacia (ah-ka'she-ah) A genus of shrubs and trees. Gum arabic

Accelerate (ak-sel'er-ate). To hasten, to quicken action

Accentuate (ak-sen'tu-ate) To emphasize

Accentuation (ak-sen-tu-a'shun). Increased distinctness

Access (ak'ses) The beginning or onset of a disease.

Accession (ak sesh'un) The same as access.

Accouchement (ak-koosh'ment). Delivery in child-bed

Acetate (as'et-at) A salt of acetic acid

Achorion (ah-ko're-on). A genus of fungous organisms in the skin.

Acid (as'id) A sour substance

Acidity (as-id'it-e) Sourness, tartness, sharp to the taste

Acme (ak'me). The crisis or height of a disease

Acne (ak'ne) Inflammation of the sebaceous glands from retained secretion.

Acne Rosacea (ak'ne ro-za'she-ah). Chronic congestion of the skin of the face

Aconite (ak'o-nit). Same as aconitum.

Aconitum (ak-on-i'tum). A genus of herbs and also the poisonous roots and leaves of monk's hood, cardiac sedative.

Acrid (ak'rid). Burning, pungent

Acute (a-kut'). Rapid, severe, sharp, keen

Adaptation (a-dap-ta'shun) The adjustment of the pupil to light variations.

Adenitis (ad-en-i'tis). Inflammation of a gland

Adenoid (ad'e-noid). Resembling a gland.

Adenoma (ad-en'o-mah). A glandular tumor

Adenosis (ad-en-o'sis) Any chronic abnormality of the glands

Adeps (ad'eps). Lard

Adequate (ad'e-quate). Equal, proportionate, fully sufficient

Adipose (ad'i-pos). Fatty.

Adipose Arteries (ad'i-pos ar'ter-ez) Arterial branches, supplying the renal fat.

Adipose Tissue (ad'i-pos tish'u) Fat cells united by connective tissue

Adiposis (ad-i-po'sis) Corpulence; fatty degeneration.

Adult (a dult'). Having arrived at mature years, of full size and strength

Adynamia (ad-in-a'me-ah) A deficiency or loss of vital power

Aeration (a-er-a'shun) Admixture or impregnation with air

Aerial (a er'e-al) Pertaining to the air

Affinity (afin'i-te). Relationship, a synonym of attraction

Afflatus (a-fla'tus) A variety of acute erysipelas A current of air

Affusion (a-fu'shun). A pouring upon, as water on the body

Agaricus (a-gar'i-kus) A genus of fungi

Agenesia (ah jen e'ze-ah). Abnormal or imperfect development

Agenesis (ah-jen'e-sis) The same as agenesia

Agent (a'jent) A substance that produces changes in the body

Agglutinative (a-glu'ti-na-tiv) Adhesive, a substance with adhesive properties

Agglutinin (a-glu'ti-nin). A substance in the blood-serum or immunized individuals which has the property of agglutinating bacteria

Agility (a gil'i-te) The power of moving the limbs quickly Activity

Agitation (aj-i-ta'shun). Violent excitement; a shaking.

Akimbo (a-kim'bo) At an acute angle, said of the arms when the hands rest on the hips and the elbows project outward

Albumen (al-bu'men) The white of an egg Food material in a seed between the embryo and seed-coats

Albumin (al-bu'min) A proteid animal or vegetable which is soluble in water and coagulated by heat.

Albumin Acid (al-bu'min as'id). That changed by the action of acid.

Albuminate (al bu'min-ate). A basic compound of albumin.

Albuminoid (al-bu'min-oid) Resembling albumen. A substance resembling true proteids in origin and composition.

Albuminuria (al-bu-min-u're-ah). Presence of albumin in the urine.

Albumon (al-bu'mon). A protein found in the blood, it cannot be coagulated by heat.

Alchemy (al'kem-e). The supposed art of changing base metals into gold and of discovering the elixir of life.

Aliment (al'i-ment). Nourishment; food.

Alimentary (al-i-men'ta-re). Having the quality of nourishing.

Alimentary Canal (al-i-men'ta-re ka-nal'). The whole digestive tube from the mouth to the anus.

Alimentation (al-imen-ta'shun). The process of nourishment.

Alimentation, Rectal (al-i-men-ta'shun rec'tal). Nourishing by injection of food into the rectum.

Alkali (al'ka-li). An electropositive substance combining with an acid to form a neutral salt.

Alkaline (al'ka-lin). Having the properties of an alkali.

Alkanet (al'kan-et). The herb alkanna tinctoria; the root yields a red dye.

Allay (al-la'). To abate; to assuage; to subside.

Alleviate (al-e'vi-ate). To ease; to mitigate; to make more bearable.

Allium (al'e-um). A genus of plants.

Allium Cepa (al'e-um ce'pa). Common onion.

Allium Sativum (al'e-um sa-ti'vum). Garlic; a diuretic and stimulant.

Allotropy (a-lot'ro-pe). A variation of physical properties without a change in chemic composition.

Alluvial (al-lu've-al). Belonging to soil formed by deposits of mud.

Alopecia (al-o-pe'se-ah). Loss of the hair.

Alterative (al'ter-a-tiv). A medicine that alters the processes of nutrition and excretion, restoring the normal body functions.

Alternately (al-ter'nate-le). In a reciprocal succession; by turns, as night follows day and day follows night.

Alternation of Generation (al-ter-na'shun of jen-e-ra'shun). A form of reproduction in which members can produce new beings non-sexually, while in the final stage reproduction is always sexual.

Alveole (al-ve-ol). A small cell, cavity or depression in a surface; a tooth socket.

Alvine (al-vin). Pertaining to the belly or intestines.

Alvine Concretion (al-vin kon-kre'shun). Intestinal calculus.

Alvine Discharges (al'vin dis-charg'ez). The discharge of the bowels.

Alvin Flux (al'vin fluks). Diarrhœa.

Alvus (al'vus). The belly or its contents.

Amalgam (a-mal'gam). An alloy containing mercury.

Amaurosis (am-au-ro'sis). Partial or total blindness.

Ambiguity (am-bi-gu'i-te). Uncertain; doubtful; of double meaning

Amblyopia (am-ble-o'pe-ah). Dimness of vision.

Ameba (am-e'bah). A genus of rhizo pods, an individual in the above genus.

Ameboid (a-me'boid). Having the movements of an ameba.

Amelia (ah-me'le-ah). Absence of the limbs, from birth or atrophic.

Amelioration (a-mel-i-o-ra'shun). Becoming better; improvement.

Amenorrhea (a-men-o-re'a). Irregularity or suppression of the menses.

Ammonium (am-mo'ne-um). A hypothetic alkaline base existing only in combination.

Amnesia (am-ne'ze-ah.) A loss of memory for words.

Amoeba (am-e'bah). See ameba.

Amputation (am-pu-ta'shun). The operation of cutting off a limb or part of a limb.

Amygdalitis (am-ig-dal-it'tis). Tonsillitis.

Amylaceous (am-il-a'se-us). Containing starch.

Amylolytic (am-il-o-lit'ik). Converting starch into sugar.

Analog or Analogue (an'a-log). A part or organ similar in function to another but different in structure.

Analogous (an-al'a-gus). Conforming or answering to; bearing resemblance.

Analysis (an-al'i-sis). The resolution of a body into its elements.

Analysis Gasometric (an-al'i-sis gas-o-met'ric). That of gaseous compounds.

Anam Ulcer (an'am ul'sur). A form of phagedena common in the tropics.

Anamnesis (an-am-ne'sis). The past history of a disease.

Anaphia (an-a'fe-ah). A deficient sense of touch.

Anaphoresis (an-af-or-e'sis). Insufficient perspiration.

Anasarca (an-as-ar'kah). General dropsy.

Anastomosis (an-as-to-mo'sis). The junction of vesels or hollow organs.

Anatomically (an-a-tom'i-cal-e). In an anatomical manner, by means of dissection; according to anatomy.

Anatomy (an-at'o-me). The science of organic structure.

Anchylosis (an-kil-o'sis). See ankylosis.

Anemia (an e'me-ah). A deficiency of blood or of red corpuscles.

Anemic (an-em'ik). Pertaining to anemia.

Aneroid (an'er-oid). Dispensing with fluid.

Anesthesia (an-es-the'ze-ah). A state of insensibility.

Anesthetic (an-es-thet'ik). A substance producing anesthesia

Aneurism (an'u-rizm). A dilatation of an artery.

Angina (an-ji'nah). A sense of suffocation.

Anginose (an'jin-oz). Affected with angina.

Angioleucitis (an-je-o-lu-si'tis). Inflammation of the lymphatics.

Animation (an-i-ma'shun). The act of infusing life; the state of being animated.

Ankylosis (an-kil-o'sis). Union of the bones forming a joint resulting in a stiff joint.

Annular (an'u-lar). Ring-like.

Annular Ligament (an'u-lar lig'a-ment). The ligament around the wrist and ankle.

Anodyne (an'o-din). A medicine relieving pain.

Antacid (ant-as'id). An alkali; neutralizing acidity.

Antagonist (an-tag'o-nist). A drug neutralizing the effects of another, or a muscle opposing the action of another.

Antaphrodisiac (ant-af-ro-dis'i-ak). A medicine which cools the animal passion.

Antecedent (an-te-ced'ent). A person or thing that goes before, with reference to time, place, position, etc.

Anterior (an-ter'e-or). Situated before or in front of.

Anteroposterior (an-ter-o-pos-te're-or). From before; backward.

Anthelmintic (an-thel-min'tik). A remedy expelling worms.

Antibilious (an-te-bil'yus). Opposing biliousness.

Antidote (an'ti-dot). An agent counteracting the action of a poison.

Antifermentative (an-te-fer-men'ta-tiv). Arresting fermentation.

Antimorbific (an-te-mor-bif'ic). That which opposes disease.

Antiperiodic (an-te-per-i-od'ik). A remedy for periodical disease.

Antiphlogistic (an-te-flo-jist'ik). An agent reducing inflammation or fever.

Antipruritic (an-te-pru-rit'ik). Relieving itching.

Antipyretic (an-ti-pi-ret'ik). Reducing temperature.
Antiscorbutic (an-te-skor-bu'tik). A remedy for scurvy.
Antiseptic (an-te-sep'tik) Preventing or destroying the germs of putrefaction or suppuration.
Antispasmodic (an-te-spas-mod'ik). Counteracting or curing spasm
Antisyphilitic (an-te-sif-i-lit'ik). A remedy for the relief of syphilis.
Antitoxin (an-te-toks'ine). Virus used to neutralize the action of toxin.
Anuria (an-u're-ah). An absence or deficiency of urine.
Anus (a'nus) The extremity of the rectum.
Aperient (ah-pe're-ent). Laxative, opening
Aperture (a'per-tur). An opening or orifice.
Apex (a'peks). The tip, point or summit of anything
Aphasia (ah-fa'se-ah). A loss of power of speech from cortical lesion
Aphasia Amnesic (ah-fe'se-ah am-ne'sik). A want of memory for words
Aphasia Ataxic (ah-fe'se-ah a-taks'ik). An inability to articulate words
Aphonia (ah-fo'ne-ah) A loss of voice, due to peripheral lesion
Aphonia Clericorum (ah-fo'ne-ah cler-i-co'rum) Clergymen's sore throat.
Aphthae (af'the). Small white ulcers of the mouth, thrush
Aphthous (af'thus). Marked by aphthae.
Apis Mellifica (ap'is mel-if'ik-a). The honey-bee.
Apnea (ap-ne'ah). Temporary absence of breathing.
Apoplexy (ap'o-pleks-e). Paralysis from rupture of a cerebral vessel.
Apoplexy, Bulbar (ap'o-pleks-e bulb'ar) Due to the rupture of a blood vessel in the medulla oblongata.
Apothecary (a-poth'e-ka-re). A druggist, a seller of drugs.
Apparatus (ap-a-ra'tus) Instruments, a number of organs which act together in the performance of a definite function.
Appendage (ap pen'dage) That which is attached to an organ as a part of it
Appendicitis (ap-pen-dis-i'tis). Inflammation of the appendix vermiformis.
Appendix (ap-pen'diks). An appendage, an adjunct.
Approximate (ap-proks'i-mate) To come near to, approaching; closely resembling
Arabinose (ar'ab-in-os). A pentose, gum sugar from arabic acid
Arachnitis (ar-ak-ni'tis) Inflammation of the arachnoid membrane
Arachnoid (ar ak'noid) Resembling a web
Arcanum (ar-ka'num). A sweet medicine or nostrum
Area (a're ah) Any space with boundaries.
Areola (a-re'o-lah) A ring-like discoloration, colored ring around the nipple.
Areolae (a-re'o-le) The interstices in connective tissue
Areolar (ar-e'o-lar) Pertaining to the areola, full of interstices
Aroma (a-rom'ah). Intense perfume, odor
Aromatic (a-ro-mat'ik) Spicy, fragrant; a spicy, stimulating drug
Aromatic Powder (a-ro-mat'ik pow'der). A mixture of nutmeg, ginger, cinnamon and cardamona.
Aromatic Tincture (a-ro-mat'ik tinc'ture) An alcoholic solution of aromatic powder
Arteritis (ar-te-ri'tis). Inflammation of an artery
Artery (ar'ter-e). A vessel carrying blood from the heart.
Arthritic (ar-thrikt'ik). Relating to inflammation of the joints.
Articulated (ar-tik'u-la-ted). Jointed.
Articulation (ar-tik-u-la'shun). A joint or an arthrosis. The enunciation of words.
Articulatory (ar-tik'u-la-to-re). Pertaining to articulation.
Artificial (ar-ti-fish'al). Made or imitated by art.
Arytenoid (ar-it-e'noid). Cup-shaped or ladle-shaped
Ascaris (as'kar-is). A genus of parasitic roundworms.
Ascending (as-send-ing). Rising.
Ascending Degeneration (as-send-ing de-jen-er-a'shun). A degeneration of nerve-fibres progressing from the periphery to the centre.
Ascites (as-si'tez). Dropsy of the abdomen.
Asparagin (as-par'a-gin). The organic principle of asparagus
Asparagus (as-par'a-gus) A genus of plants of the lily family It is a diuretic
Aspermous (ah-sper'mus) Without seed
Asphyxia (as-fiks'e-ah) The condition caused by the nonoxygenation of the blood Suspended animation
Aspirate (as'pi-rate) To breathe roughly.
Aspiration (as-pi ra'shun). Inspiration, imbibition.
Aspirator (as'pir-a-tor) An instrument for extracting fluids from cavities
Assimilable (as-im'il-a-bl) Capable of being assimilated
Assimilate (as-im'i-late) To become similar To perform the act of converting food to the substance of the body.
Assimilation (as-im-il-a'shun) The act of absorbing nutriment. A state of resemblance.
Assumption (as-sump'shun) The act of taking to oneself, adoption.
Asthenia (as-the'ne-ah) A loss of strength.
Asthenopia (as-then-o'pe-ah) Weak or painful vision.
Asthma (az'mah). Paroxysmal difficult breathing with oppression
Asthma, cardiac (az'mah kar'di-ak). Difficult breathing due to heart disease.
Asthmatic (az mat'ik) Subject to asthma.
Astringent (as-trin'jent) An agent producing contraction of organic tissues or the arrest of a discharge
Atmosphere (at'mus-fer) The air or gaseous mixture surrounding the earth, fifteen pounds to the square inch
Atomizer (at'o-mi-zer) An instrument for reducing a jet of liquid to a spray.
Atrophia (at-ro'fe ah). See atrophy.
Atrophy (at'ro-fe) A wasting of a part from a lack of nutrition
Atropina (at'ro-pin) The active principle of belladonna
Attar of Rose (ot'ar). Oil of rose
Attenuated (a-ten'u-a-ted) Wasted, thinned.
Attenuation (a-ten-u-a'shun) A thinning or weakening.
Attic (at'ik). The portion of the tympanum above the atrium
Auditory (aw'di-to-re) Pertaining to the act or organs of hearing
Augment (aug'ment) The increase of a disease or the period intervening between its attack and its height
Auricle (au'rik-l). The external ear. One of the upper cavities of the heart.
Auricular (aw'rik-u-lar) Pertaining to the ear or cardiac auricle
Auriculoventricular (aw-rik u-lo-ven-trik'u-lar). Pertaining to both the auricle and ventricle
Auscultation (aws-kul ta'shun). A method of determining the condition of an organ by listening to the sounds produced by it.
Autecic (aw-te'sik) Living absolutely on the same organism.

Autopsy (aw'top-se). Examination of a corpse.
Auxiliary (awks-il'e-a-re). Aiding, assisting.
Axilla (aks-il'ah). The armpit
Axillary (aks-il'a-re) Relating to the armpit.

B

Bacillus (bas-il'us). A genus of schizomycetes, the most important group of bacteria.
Bacteria (bak-te're-ah) Micro-organisms; microbes; schizomycetes
Bacterial (bak-te're-al). Relating to or caused by bacteria.
Bactericidal (bak-te-ris-i'dal) Destroying bacteria.
Bactericide (bak-te'ris-id). See germicide.
Bacteriemia (bak-te-re-e'me-ah) The presence of bacteria in the blood
Bacterin (bak'ter-in) Any vaccine prepared from a specific bacterium
Bacterium (bak-te're um) A genus of fission fungi.
Balsam (bawl'sam). A compound of resin and evaporative oils, fragrant and aromatic
Balsamic (bawl'sam-ik) Resembling balsam; pertaining to balsam
Balsamic Tincture (bawl'sam-ik tink-ture) Compound tincture of benzoin.
Barley (bar'le) A cereal used for food
Barley-water (bar'le-wa'ter). A nutritious drink made of an infusion of barley.
Belladonna (bel-ah-don'ah) A poisonous plant, used as an anodyne, an antispasmodic
Benignant (be-nig'nant). Not malignant; mild
Benzoin (be'zoin) An antiseptic resin from styrax benzoin
Bergamot Camphor, Oil of (ber'gam-ot kam'fer). An evaporative oil from rind of citrus bergamia
Bergaptene (ber-gap'tene) An oily substance from bergamot oil
Beriberi (ber'e-ber'e). An East Indian microbic disease characterized by weakness, anemia, dropsy, dyspnea and paraplegia.
Bibulous (bib'u-lus). Having the quality of absorbing water
Bicapitate (bi-kap'it-at) Having two heads
Bicapsular (bi kap'su-lar). Having two capsules
Bicarbonate (bi-kar'bo-nat) A compound of two equivalents of carbonic acid and one of a base.
Bicaudate (bi-kaw'date). Having two tails
Bicellular (bi-sel'u-lar). Composed of two cells.
Biceps (bi'seps). Two-headed, applied to muscles.
Bichlorid (bi-klo'rid) A chlorid with twice as much chlorin as proto-chlorid
Biennial (bi-en'e-al). Occurring every two years.
Biforate (bi-fo'rat). Having two aperatures or pores.
Bifurcate (bi-fer'kat) Divided into two branches.
Bile (bil). A yellow, bitter liquid secreted by the liver.
Biliary (bil'e-a-re). Pertaining to the bile, conveying the bile
Bilious (bil'yus) Pertaining to bile; having a disordered liver
Binary (bi'na-re). Compounded of two elements
Biogenesis (bi-o-gen'e-sis) The genesis of living beings from living beings.
Biologist (bi-ol'o-jist). One versed in biology.
Biology (bi-ol'o-je) The science of life and living things.
Biolysis (bi-ol'i-sis). The destruction of life, death.
Biolytic (bi-o-lit'ik). Tending to destroy life
Biometer (bi-om'et-er) An instrument for measurng life sounds
Biometry (bi-om'et-re). The measure of life
Bioscopy (bi-os'ko-pe) Examination of the body to see if life is extinct
Bismuth (biz'muth). A pinkish-white crystalline metal
Blackheads (blak'heds) See comedo
Bland (bland). Mild; nonirritating.
Blepharal (blef'ar-al) Relating to the eyelids.
Blepharism (blef'ar-ism). Spasm of the eyelid.
Blepharitis (blef-ar-i'tis). Inflammation of the edges of the eyelids.
Blister (blis'ter). A vesicle containing serum.
Blood (blud). The nutritive fluid circulating in the arteries and veins.
Bloodless (blud'les) Without blood
Bloodless Operation (blud'less op-er-a'shun). One in which the blood is expelled by compresses from the part to be operated on.
Blue Baby (blu ba'be). A color, a baby with blue disease
Blue Blindness (blu blind'ness). Inability to distinguish a blue color
Blue Disease (blu dis-ez'). See cyanopathy
Blue Flag (blu flag) See iris
Blue Mass (blue mas). A compound pill of mercury.
Blue Ointment (blu oint'ment). Mercurial ointment.
Blue Stone (blu stone). See blue vitriol.
Blue Vision (blu vizh'un). See cyanopia.
Blue Vitriol (blu vit'ri-ol) Sulphate of copper, bluestone
Body (bod'e) The animal frame with its organs.
Boil (boil). A localized abscess of the skin
Bole (bol) Fine clay, formerly used as an astringment
Bolus (bo'lus) A mass of masticated food ready to swallow
Borax (bor'ax) Sodium diborate used as an antiseptic
Bovine (bo'vin) Pertaining to or derived from the ox or cow
Bowel (bow'el) The intestines
Bowel Complaint (bow'el kom-plant'). Diarrhœa
Brachia (brak'e-ah). See brachium
Brachial (brak'e-al) Pertaining to the arm
Brachium (brak'e-um) The arm from the shoulder to the elbow
Bronchi (bron'ki). See bronchus
Bronchia (bron'ke-ah) A branch of the windpipe
Bronchiole (bron'ke-ol) A minute bronchial tube.
Bronchitis (bron-ki'tis). Inflammation of the bronchial tubes
Bronchopathy (bron-kop'a-the). Any disease of the bronchi
Bronchopneumonia (bron-ko-nu-mo'ne-ah) Inflammation of the lungs beginning at the bronchi
Bronchotomy (bron-kot'o-me) Incision of the bronchus
Bronchus (bron'kus). One of the main branches of the trachea.
Bruit (bru'e). An abnormal sound in auscultation.
Bubo (bu'bo) An inflammation and a swelling of the lymphatic glands of the groin
Bugleweed (bu'gl-weed). The herb hycopus virginicus used as a narcotic and as an astringent.
Bulb (bulb). The expansion of a canal or vessel; the oblongata and pons
Bulimia (bu-lim'e-ah). Excessive, morbid hunger
Bullate (bul-late) Blistered, inflated
Bullation (bul-a'shun). Inflation, division into small compartments
Bursa (bur'sah) A small sac interposed between movable parts
Bursal (bur'sal). Pertaining to a bursa or sac.
Bursalis (bur-sa'lis). The obturator internus muscle.
Bursitis (bur-si'tis) Inflammation of a bursa.
Butane (bu'tan) An anesthetic substance from petroleum
Buttock (but'ok). One of the rounded parts of the gluteal region; the rump.

C

Cacao **(ka-ka'o). See theobroma.**

Cacao Butter (ka-ka'o but'ter). The oil of theobroma.

Cachexia (ka-keks'e-ah). A depraved condition of nutrition.

Calcareous (kal-ka're-us). Having the nature of lime.

Calcination (kal-sin-a'shun). The process of expelling by heat the evaporative elements of a substance.

Calcined (kal'sind) Subjected to calcination.

Calcium (kal'se-um). A metal, the basis of lime.

Calculi (kal'ku-li). Plural of calculus.

Calculus (kal'ku-lus). A stone-like concretion formed in the body.

Calf (kaf). The fleshy part of the leg below the knee.

Calisthenics (kal-is-then'iks). A system of light gymnastics.

Callosum (kal-lo'sum). The bridge of white nerve substance joining the hemisphere of the brain.

Callous (kal'us). Hard; indurated.

Callus (kal'us) A callosity, a new bony deposit about a fracture.

Cancelli (kan-sel'li). The divisions of the interior of bone.

Cancer (kan'ser). See carcinoma.

Canker (kan'ker). A cancerous or gangrenous sore.

Cannabis (kan'na-bis) Hemp; a genus of narcotic, antispasmodic and aphrodisiac plants.

Cantharides (kan-thar'i-dez). The plural of cantharis

Cantharis (kan'thar-is). Spanish fly; dried and powdered beetle cantharis vesicatoria

Canthus (kan'thus). A cavity at the extremities of the eyelids, an angle of the eye.

Capillary (kap'il-ar-e). A minute blood vessel, like a hair.

Capsicum (kap'si-kum). Cayenne pepper; a powerful stimulant.

Capsular Ligament (kap'su-lar lig'a-ment). A ligament around a movable joint.

Capsule (kap'sul). A membranous sac inclosing a part

Carbo Hydrate (kar'bo hi'drate). A compound of carbon with hydrogen and oxygen, the latter being in the proportion to form water.

Carbon (kar'bon). A nonmetal occurring in the forms of diamond, graphite and charcoal, the latter only being used in medicine.

Carbonated (kar'bon-at-ed) Containing or impregnated with carbonic acid.

Carbuncle (kar'kunk-l). A large circumscribed inflammation of the subcutaneous tissue.

Carcinoma (kar-sin-o'mah) A malignant tumor with the production of epithelioid cells; cancer.

Cardia (kar'de-ah). The heart; an orifice of the stomach

Cardiac (kar'de-ak) Pertaining to the heart or cardia

Cardiagra (kar-de-a'grah). Gout of the heart.

Cardialgia (kar-de-al'je-ah). Heartburn; pain in the heart

Cardiocele (kar'de-o-sel). Hernia of the heart.

Cardiology (kar-de-ol'o-je). The science of the heart.

Carminative (kar-min'a-tiv). A medicine expelling flatus.

Carotid (kar-ot'id) The principal artery of the neck.

Carpal (kar'pal). Pertaining to the carpus or wrist.

Carpus (kar'pus). The wrist.

Cartilage (kar'ti-laj). Gristle; a nonvascular elastic tissue, softer than bone.

Cartilaginous (kar-til-aj'in-us). Of the nature of cartilage.

Caruncle (kar'un-kl). A small, fleshy growth.

Catalysis (ka-tal'i-sis). A chemic reaction promoted by the presence of a third unaffected substance. Dissolution; decay; deterioration.

Catamenia (kat-a-me'ne-ah) The menses.

Cataplasm (kat'a-plazm). A poultice.

Catarrh (ka-tar'). Inflammation of the mucous membrane

Cathartic (ka-thar'tik). A purgative medicine; a medicine which opens the bowels freely.

Catheter (kath'e-ter). A tube for introduction through a narrow canal into a cavity, usually the bladder.

Catheterism (kath'et-er-ism). The use of the catheter.

Catholicon (kath-ol'i-kon) A panacea; a universal medicine.

Caudate (kaw'dat). Having a tail

Caudate Lobe (kaw'dat lob). The tail-like process of the liver.

Causalgia (kaw-zal'ge-ah). An intense burning neuralgia.

Causation (kaw-za'shun). The act of causing or producing.

Caustic (kaws'tik). A substance which burns living tissues.

Caustic Arrows (kaws'tik ar'rows). Conic sticks charged with caustic material.

Caustic, Lunar (kaws'tik, lu'nar). Silver nitrate cast into sticks.

Caustic, Mitigated (kaws'tik, mit'i-ga-ted). Silver nitrate fused with potassium nitrate.

Caustic Potash (kaws'tik pot'ash). Potassium hydrate; a powerful potash used in medicine and the arts for cauterizing and cleansing purposes, and in the manufacture of soft soap.

Caustic Soda (kaws'tik so'da) Sodium hydrate; similar in properties and uses to caustic potash, the soaps made with it, however, being hard.

Cauterization (kaw-ter-i-za'shun). The application of a cautery.

Cautery (kaw'ter-e). A substance or instrument for burning or disorganizing a part.

Cavitary (kav'it-a-re). Hollow; having a body-cavity or intestinal tract.

Cecum (se'kum). The blind pouch at the head of the large intestine.

Cellular (sel'u-lar). Composed of cells.

Cellulose (sel'u-los). The supporting structure or frame work of plant tissue.

Cephalalgia (sef-al-al'je-ah) Pain in the head.

Cephalic (sef-al'ik). Pertaining to the head.

Cera (se'rah). Wax.

Cerate (se'rate). A composition having wax for a basis.

Ceratum (se-ra'tum). A cerate.

Cerebellum (ser-e-bel'lum). The lower part of the brain

Cerebral (ser'e-bral). Relating to the brain.

Cerebritis (ser-e-bri'tis). Cerebral inflammation.

Cerebrosid (ser'e-bro-sid). Any one of the group of chemic substances containing nitrogen but no phosphorus, found in nerve tissue.

Cerebrospinal (ser-e-bro-spi'nal). Relating to the brain and spine.

Cerebrum (ser'e-brum) The chief part of the brain; the center of reasoning faculties.

Cerumen (se-ru'men). The wax or yellow matter secreted by the ear.

Cervical (ser'vi-kal) Pertaining to the neck or to a cervix.

Cervix (ser'viks). The neck; any neck-like part.

Cessation (ces-sa'shun). To stop; to rest; to pause; ceasing from action.

Cesspool (ses'pool). A hole sunk in the earth to receive drainage.

Cevadin (sev'ad-in). An alkaloid from sabadilla
Chalybeate (ka-lib'e-at). Any water or liquid containing iron
Chancre (shang'ker). The primary or hard syphilitic ulcer.
Chancroid (shang-kroid). Resembling a chancre.
Chancrous (shang'krous). Of the nature of a chancre.
Charcoal (char'kol). Coal produced from wood by smothered combustion.
Charlatan (shar'la-tan). A quack.
Charlantry (shar'lat-an-re). Quackery.
Chemical (kem'i-kal). Pertaining to chemistry See chemistry
Chemistry (kem'is-tre) The science of the molecular and atomic structure of bodies
Chilblain (chil'blan) Cutaneous inflammation due to cold
Chloretone (klo're-ton). A white crystalline substance used as a hypnotic and local anesthetic
Chlorin (klo'rin). A nonmetallic gaseous element
Chlorinated (klo'rin-a-ted). Charged with chlorin See chlorin
Chlorite (klo'rite). A salt of chlorous acid.
Cholagog (kol'ag-og) A medicine that promotes the flow of bile
Cholagogue (kol'ag-og). Same as cholagog.
Choleric (kol'er-ic). Abounding with bile. Easily irritated
Chondroma (kon-dro'mah). A cartilaginous tumor
Chorea (ko-re'ah) Saint Vitus's dance, involuntary muscular twitchings
Choreoid (ko're-oid). Pertaining or similar to chorea
Chorioid (ko're-oid). See choroid.
Choroid (ko'roid). The second or vascular tunic of the eye
Choroiditis (ko-roid-i'tis). Inflammation of the choroid
Chromium (kro'me-um). A hard, gray, metallic element
Chronic (kron'ik). Long continued; the reverse of acute
Chyle (kil) The milky fluid found in the mesenteric lymph-vessels during absorption
Chylopoietic (ki-lo-poi-et'ik) Chyle-producing
Chyme (kim) The food that has undergone gastric but not intestinal digestion
Cicatrix (se-ka'trix) A scar from a wound
Cicatrization (sik-a-triz-a'shun). The process of healing
Cicatrize (sik'a-triz) To heal.
Cilia (sil'e-ah) The eyelashes; hair-like processes of certain cells
Ciliary (sil'e-a-re) Pertaining to the cilia
Ciliary Body (sil'e-a-re bod'e). The ciliary muscle and processes
Cinchona (sin-ko'nah) A genus of trees and their bark yielding quinin
Cinchonism (sin'kon-ism). The systemic effects of quinin in overdose
Circumscribed (ser'kum-skribed). Clearly defined, as an abscess
Citrate (si'trate) A salt of citric acid.
Citrus (sit'rus) A genus of trees yielding lemons, limes, and oranges
Clarificant (klar'if-ik ant). A substance for clearing a solution
Clarified (klar'i-fied). To purify; to make clear.
Clavicle (klav'i-kel) The collar-bone joining the sternum and scapula
Climacteric (kli-mak'tre-ik) A critical period in human life or a period in which some great change is supposed to take place in the human constitution
Clinic (klin'ik) Bedside instruction.
Clinical (klin'ik-al). Pertaining to a sick-bed or clinic.
Clonic (klon'ik.) Shaking; convulsive; irregular.
Clyster (klis'ter). A rectal injection; an enema.
Coagulate (ko-ag'u-late). To change from a liquid to a denser state.
Coagulation (ko-ag-u-la'shun). A clotting.
Coagulum (ko-ag'u-lum). A clot or mass of thickened blood
Coalesce (ko-a-les'). To grow together; to unite as separate bodies, or separate parts into one body.
Coalescence (ko-al-es'ens). The union of two or more parts
Coaptation (ko-ap-ta'shun) The adjustment of the edges of fractures
Cocain (ko'kain). An alkaloid from coca; it is a powerful local anesthetic and internally is used as a narcotic
Coccus (kok'us) A cell or capsule.
Coccyx (kok'siks). The last bone of the spinal column.
Cochineal (coch'i-neal) Coccus cacti; dried insects used as coloring matter
Cocoa (ko'ko). See cacao A name given to a simple preparation of the ground kernels of the cacao or chocolate tree
Coco-nut Oil (ko'ko-nut oil). The oil from the fruit of the palm.
Codein (ko'de-in). One of the alkaloids derived from opium.
Coil (koil). A spiral
Coil Gland (koil gland) A sweat gland.
Colchicum Autumnale (kol'chick-um au tum'nal). Meadow saffron. It is an emetic and drastic cathartic It is used in gout and in rheumatic affections.
Cold (kold) Coryza, catarrh of the respiratory tract
Collapse (kol-laps') A marked depression of the vital activities of the body
Colliquative (kol-lik'wa-tiv) Profuse or excessive, so as to cause exhaustion, said of the discharges, as a colliquative sweat.
Collision (kol-li'shun) The coming together of two bodies, a concussion.
Collodion (kol-o'de on) Same as collodium
Collodium (kol-o'de om) A dressing for wounds, made by dissolving gun-cotton in ether and alcohol
Colloid (kol'oid) Glue-like; a noncrystallizable organic substance
Colloid Cancer (kol'oid kan'ser). Carcinoma with colloid degeneration
Colloid Cyst (kol'oid cist) A cyst with jelly-like contents.
Colloma (kol-o'mah). A cyst containing colloid matter
Collum (kol'um) The neck.
Collutorium (kol-u-to're-um). A mouth wash; a gargle
Collyrium (kol-ir'e-um). A medical lotion for the eyes.
Coloboma (kol-o go'mah) A fissure, especially of parts of the eye
Colocentesis (ko-lo-sen-ti'sis) Surgical puncture of the colon
Coloenteritis (ko-lo-en-ter-i'tis) Inflammation of the small and large intestines
Colon (ko-lon). The part of the large intestine from the cecum to the rectum
Coma (ko'mah) An abnormally deep sleep; stupor.
Comatose (ko'ma-tos) In a condition of coma.
Combustion (kom-bus'chun) The state or operation of burning
Comedo (kom'e do) Blackhead; a worm-like mass in an obstructed sebaceous duct
Comminution (kom min-u'shun). The process of breaking into pieces.
Commiphora (kom-if'o-rah) The genus of trees furnishing myrrh and balm of Gilead.

Commissure (kom'mis-ur). A joining or uniting.

Compensation (kom-pen-sa'shun). The state of counterbalancing a defect of structure or function.

Complemental Air (kom-ple-men'tal air). That inhaled after ordinary breathing.

Complexus (kom-pleks'us). The totality of the symptoms of a disease.

Complication (kom-pli-ka'shun). A combination of diseases or morbid conditions.

Compress (kom'pres). Folded cloths for local pressure.

Compression (kom-presh'un). The forcing together of a substance.

Conarium (ko-na're-um). The pineal gland of the brain.

Concave (kon'kav). Presenting a hollowing incurvation

Concavity (kon-kav'i-te). A depression or fossa.

Concentrated (kon'sen-tra-ted). Made stronger or purer.

Concentric (kon-sen'trik). Having a common center.

Conception (kon-sep'shun). The fecundation of the ovum.

Conception Imperative (kon-sep'shun im-per'a-tiv). A false idea dominating an insane person's actions

Concoction (kon-kok'shun). The boiling of two substances together.

Concomitant (kom-kom'it-ant). Accompanying, as symptoms.

Concrete (kon-kret'). Solidified or condensed.

Concretion (kon-kre'shun) A calculus, an osseous deposit; abnormal union of adjacent parts.

Concussion (kon-kush'un). A shaking

Concussion of the Brain (kon-kush-un). Shock or agitation of the brain caused by impact with another body

Condiment (kon'di-ment). Seasoning; sauce; that which is used to give relish to meat or other food.

Conductive (kon-duk'tiv). Having the power to conduct.

Conductivity (kon-duk-tiv'i-te). The capacity for conducting.

Conductor (kon-duk'tor). An instrument directing a surgical knife

Conduit (kon'dit) Any medium of transmission as the nerves and blood vessels

Condyle (kon'dil). Any rounded prominence, such as occurs in the joints of many bones especially the femur, humerus and lower jaw

Confection (kon-fek'shun). A sweet excipient in pharmacy.

Confinement (kon-fin'ment). The period of parturition.

Congelation (kon-jel'a-shun). A freezing; frostbite.

Congenital (kon-jen'i-tal). Existing from birth, innate.

Congestion (kon-jes'chun). An excessive accumulation of blood in an organ with disorder of its functions

Conium Maculatum (kon-i'um mak-u-la'tum) Poison hemlock. The leaves and seeds are sedative and narcotic.

Conjugation (kon-ju-ga'shun) A form of reproduction or cell division

Conjugation Nucleus (kon-ju-ga'shun nu'kle-us). The segmentation-nucleus.

Conjunctiva (kon-junk-ti'vah). The mucous membrane of the eye.

Conjunctivitis (kon-junk-tiv-i'tis). Inflammation of the conjunctiva

Conserve (kon-serv'). A confection.

Consistence (kon-sis'tens). The degree of density or hardness.

Constipation (kon-sti-pa'shun). A sluggish action of the bowels.

Constitution (kon-sti-tu'shun). Composition; the general temperament of the body

Constrict (kon-strikt'). To draw together in one part

Constrictor (kon-strik'tor.) A contracting or compressing muscle.

Contagion (kon-ta'jun). The process of transfer of specific diseases. The act of taking a disease by contact.

Contagious (kon-ta'jus). Having the character of contagion.

Contagium (kon-ta'je-um). Germs of specific diseases. Contagion.

Contamination (kon-tam-i-na'shun). The act of polluting; pollution; defilement, taint.

Contiguity (kon-tig-u'i-te). Actual contact.

Continuity (kon-tin-u'i-te). Uninterrupted connection.

Contorted (kon-tor'ted). Twisted.

Contortion (kon-tor'shun). A twisting or wresting of a limb or member of the body out of its natural situation.

Contract (kon-trakt'). To draw the parts together; to shrink, to acquire by contagion.

Contractile (kon-trak'til). Having the power to contract.

Contraction (kon-trak'shun). Decrease of volume, shortening.

Contracture (kon-trak'chur). A state of permanent rigidity.

Contuse (kon-tuz') To bruise.

Contusion (kon-tu'zhun). A bruise.

Convalescence (kon-va-les'ence). The period of recovery after a disease.

Convergence (kon-ver'gens). A coming together.

Convex (kon'veks). Curved outward on the external surface.

Convoluted (kon'vo-lu-ted). Rolled one part on another.

Convolution (kon-vo-lu'shun). A fold, twist or coil of any organ.

Convulsion (kon-vul'shun). A violent involuntary contraction, a spasm or fit.

Co-ossify (ko-os'si-fi). To become united by ossification, to form one bone, as, several bony elements co-ossify in man to form the sphenoid bone.

Copious (ko'pi-us) Abundant; plentiful; in great quantities.

Coracoid (kor'ak-oid). Shaped like a crow's beak.

Cordial (kor'jal). An aromatic, spirituous stimulant

Coriaceous (kor-ri-a'shus). Leather-like; elastic and tough.

Corm (korm). A bulb-like, solid, fleshy subteranean stem. A colony of persons.

Corn (korn) A local thickening and induration of the skin, as on the toes.

Cornea (kor'ne-ah). The transparent anterior part of the eyeball.

Corneal (kor'ne-al). Pertaining to the cornea.

Corneoritis (kor-ne-o-ri'tis). Inflammation of both cornea and iris.

Cornu (kor'nu). A horn-shaped structure.

Coronary (kor'o-na-re). Encircling, as a vessel or nerve.

Coroner (kor'o-ner). An officer who holds inquests on those dead from violence

Corpora (kor'po-rah). Plural of corpus. Human bodies, living or dead.

Corporeal (kor-po're-al) Having a body; consisting of material substance

Corpulency (kor'pu-len-se) Obesity; largeness of the body, fleshiness.

Corpus (kor'pus). A body; the human body.

Corpuscle (kor'pus-l). A minute body, a cell

Corrective (kor-rek'tiv). A substance modifying the action of drugs.

Correlation (kor-re-la'shun). Interdependence; reciprocal relation.

Corroborant (kor-ob'o-rant). A tonic, invigorating remedy.

Corroborative (kor-ob'o-ra tiv). A medicine that strengthens, a corroborant.

Corrosive (kor-o'siv) A substance that eats away or destroys.

Cortex (kor'teks). The external gray layer of the brain.

Cortical (kor'tik-al). Pertaining to the cortex.

Cortical Cataract (kor'tik-al kat'a-ract). Opacity in the cortex of the lens

Cosmetic (kos-met'ik). Making beautiful; a remedy for beautifying the skin

Cosmetic Operation (kos-met'ik op-er-a'shun). An operation for lessening unsightliness.

Cosmolin (koz'mo-lin). See petrolatum.

Costal (kos'tal). Pertaining to the ribs.

Costal Cartilage (kos'tal kar'ti-laj). The anterior cartilaginous extremity of a rib

Costal Respiration (kos'tal res-pi-ra'shun) Respiration carried on chiefly by the chest muscles.

Costive (kos'tiv) Affected with constipation

Costiveness (kos'tiv nes). Abnormality of digestion marked by hardness and retentention of the discharge of the bowels.

Counter-irritant (koun'ter-er'ri-tant). A medicine which relieves irritation in one organ by increasing it in another.

Cranial (kra'ne-al). Pertaining to the skull

Cranium (kra'ne-um). The skull, the bony case of the brain

Crassamentum (kras-a-men'tum) A clot, as of blood

Crepitus Indux (krep'i-tus in'dux) The crackling rale heard at the beginning of croupous pneumonia

Crepitus Redux (krep'i-tus re'dux) A crackling rale indicating the recession of pneumonia.

Crescent (kres'ent). Having the shape of a new moon.

Crescentic (kres-en'tik). Moon-shaped.

Cresol (kre'sol). Cresylic acid, a coal-tar product

Cretin (kre'tin). One affected with cretinism

Cretinism (kre'tin-ism). The condition of a cretin An endemic disease characterized by idiocy, goiter and a deficient development of the organism

Crisis (kri'sis). The turning point in a disease.

Crude (krud). In the natural form, raw

Crus (krus) The leg, a leg-like structure

Crypt (kript) A small sac or follicle; a glandular cavity

Cryptogram (krip'to-gram) A flowerless plant

Cryptitus (krip-ti'tis). Inflammation of a crypt

Crystals (kris'tals). Solid substances of definite geometric form, resulting from the action of natural forces

Crystalline (kris'tal-en) Like a crystal.

Curd (kurd) The coagulum of milk.

Cutaneous (ku-ta'ne-us). Pertaining to the skin

Cuticle (ku'ti-kl) The epidermis or scarf skin.

Cutis (ku'tis). The derma or true skin

Cutization (ku-tiz'a-shun). A change into dermic tissue

Cyanopathy (si an-op'a-the) See cyanosis.

Cyanopia (si-an-o'pe-ah) A perverted state of the vision rendering all objects blue

Cyanopsia (si-an-op'se-ah). See cyanopia

Cyanosis (si-an-o'sis) Blue discoloration of skin from nonoxidation of blood

Cyanotic (si-an-ot'ik) Pertaining to cyanosis

Cyclotomy (si-klot'o-me) An operation for the relief of glaucoma consisting of an incision through the ciliary body.

Cynanche (sin-an'ke). An inflammatory disease of the throat

Cyst (sist). A membranous sac containing fluid.

Cysticus (sis'tik-us). Any one member of a family of tapeworms which in the course of development form the cysticercus or bladder-worm

Cystitus (sis-ti'tis). Inflammation of the bladder.

D

Debauch (de-boch'). Excess in eating or drinking. Intemperance.

Debilitant (de-bil'it-ant). An agent allaying excitement.

Debilitated (de-bil'i-tated). To weaken, to impair the strength of.

Debility (de-bil'i-te) Weakness; feebleness; languor of body.

Deciduous (de-sid'u-us). Shedding; falling; not perennial or permanent

Decoction (de-kok'shun). Result obtained by boiling substances in a fluid.

Decomposition (de-kom-po-zish'un). Putrefaction, the analysis of a body.

Decrepitude (de krep'i-tude). The broken state of the body, produced by decay and the infirmities of age.

Decubital (de-ku'bit-al). Relating to a bed-sore or to decubitus

Defecation (def-e-ka'shun). The evacuation of the bowels

Defect (de-fekt'). An imperfection; an absence of a part or organ

Defervescence (de-fer-ves'ens). Abatement or decrease of a fever.

Deformity (de-for'mi-te). Physical malformation or distortion

Degeneration (de-jen er-a'shun). Deterioration in structure of a tissue or an organ

Deglutition (deg lu tish'un). The act or power of swallowing

Dejection (de-jek'shun). Discharge of the bowels

Deleterious (del e-te'ri-ous). Injurious, pernicious; unwholesome

Deliquescent (del-i-ques'ent). Liquefying from absorption of atmospheric moisture

Delirium (de-lir'e um) Mental aberration due to disease, wandering of the mind

Delta Fornices (del'ta for'ni-ces). See lyra fornices.

Deltoid (del'toid). Delta shaped; a muscle of the shoulder

Delusion (de-lu'shun) A false judgment of objective things

Demarcation (de-mar-ka'shun) The act of marking the limits of, separation, as into a class

Demented (de-men'ted) Deprived of reason.

Dementia (de-men'she-ah). Profound mental incapacity

Demulcent (de-mul'sent). A medicine having a soothing effect

Dentin (den'tin). The bony structure of the teeth

Dentition (den-tish'un) The cutting of the teeth and the period of the same

Deobstruent (de ob'stru ent) A medicine having the power of removing obstructions from the passages of the body.

Deplete (de-plet') To empty

Depression (de-presh'un). A hollow or fossa; a depressed condition.

Deprivation (dep ri-va'shun) The act of depriving, a taking away.

Depuration (dep-u-ra'shun). Cleansing from impurities

Derangement (de-ranj'ment) Disorder of intellect; insanity.

Dermalgia (der-mal'je-ah). Neuralgia of the skin

Dermic (der'mik) Pertaining to the skin.

Dermopathy (der-mop'a-the). Any disease of the skin.

Desiccate (des'i-kate). To become dry.

Despumation (des-pu-ma'shun). The formation of froth.

Desquamation (des kwam-a'shun) Scaling of the cuticle

Detergent (de-ter'jent). Cleansing, purging.

Deteriorate (de-te'ri-o-rate). To grow worse, to be impaired in quality, to degenerate

Deterioration (de-te ri-o ra'shun). The state of growing worse

Determination (de-ter-min-a'shun) Tendency to flow to, more plentiful than is normal

Detritus (de tri'tus). Waste matter from disorganization.

Dexter (deks'ter) Upon the right side.

Dextral (deks'tral). Pertaining to the right side

Diabetes (di-a-be'tes) A disease characterized by an excessive flow of urine

Diabetic (di a-bet'ik). One affected with diabetes.

Diabetid (di-a-be'ted A cutaneous manifestation of diabetes

Diacetate (di-as'et at) A salt of diacetic acid

Diagnosis (di-ag no'sis) The recognition of a disease from its symptoms

Diaphoresis (di-a-for-e'sis) The production of perspiration

Diaphoretic (di-a-fo-ret'ik) An agent producing perspiration

Diaphragm (di'a-fram) The muscular wall between the thorax and the abdomen

Diarrhea (di-a-re'ah) Frequent evacuation of the bowels

Diarrhœa (di-a-re'ah) See diarrhea

Diarthrosis (di-ar-thro'sis) A freely movable articulation

Diastase (di'a-stase) A nitrogenous ferment in malt

Diastole (di-as'tole) The period of dilatation of the heart

Diathesis (di-a-the'sis) A constitutional predisposition to disease

Dicrotic (di-krot'ik) Double-beating as observed in certain pathologic conditions of the pulse

Diet (di'et). Food, a system of ailment

Dietetic (di e-tet'ik) Pertaining to diet

Dietetical (di-e-tet'i kal) Rules for regulating the kind and quantity of the food to be eaten

Differentiate (dif-fer-en'shi-ate). To become specifically distinct and separate

Differentiation (dif-fer-en-shi-a'shun) A specialization of tissues, organs or functions.

Diffusible (dif-fu'zi-ble) Capable of rapid spreading

Diffuse (dif-fuze) To scatter or spread about

Digestion (di jes'shun) Conversion of food into chyme and chyle

Dilatation (dil a-ta'shun) An expansion of a vessel or an organ

Diluent (dil'u ent) A medicine increasing the fluidity of secretions

Dilution (di lu'shun) A weakening with water.

Diminution (dim-i-nu'shun) The act of lessening, a making smaller

Dinus (dinus) Vertigo or dizziness

Dioxid (di oks'id) A compound containing two atoms of oxygen and one of a base

Diploe (dip'lo-e) The cellular bony tissue between the cranial tables

Discharge (dis-charj'). A morbid secretion; an evacuation

Discrete (dis-kret') Separate, distinct· opposed to confluent

Discutient (dis-ku'shent) A medicine removing a swelling or effusion

Disease (diz-ez') A pathologic condition of any part or organ of the body

Disinfect (dis in-fekt') To free from infectiousness

Disinfectant (dis-in-fek'tant) An agent destroying germs

Disinfection (dis-in-fek'shun). Purification from that which infects

Disintegrate (dis-in'te-grate). To fall to pieces; to crumble

Dislocation (dis-lo-ka'shun) Throwing out of the natural position

Dispensation (dis-pen-sa'shun) Distribution; the act of dealing out to different persons or places

Disseminated (dis sem'i na-ted) Scattered

Dissemination (dis-sem i-na'shun) A scattering as of disease germs

Distal (dis'tal) Peripheral, away from the center

Distended (dis-tend'ed) A stretch or spread in all directions.

Distension (dis-ten'shun) A stretching and expanding

Distillate (dis'til-at). The substance distilled over

Distillation (dis-til-la'shun). The process of converting a fluid to a vapor and then reducing it again to its first form

Diuresis (di-u-re'sis). An excessive secretion of urine

Diuretic (di-u-ret'ik) A medicine increasing the flow of urine

Divergence (di-ver'gens) The act or state of receding from each other

Diverticulum (di-ver-tik'u-lum). A small cul-de-sac or pouch

Dolomite (dol'o mite) A granular magnesian carbonite of lime

Dolomitic (dol-o mit'ik) Pertaining to dolomite

Domestic (do mes'tik) Belonging to the home.

Dorsal (dor'sal) Pertaining to the back

Dosage (do-saj) The regulating of the doses of drugs

Douche (doosh) A stream of water directed against a part or one used to flush a cavity

Dover's Powder (do'vers pow'der) A powder containing ten per cent each of opium and ipecac

Drachm or Dram (dram) A weight of sixty grains

Draft (draft) A quantity of liquid medicine taken at one time.

Dram (dram) A weight of sixty grains

Drastic (dras'tik) A powerful and irritating purgative

Draught or Draft See Draft

Dropsical (drop'si-kal) Pertaining to dropsy.

Dropsy (drop-si). An effusion of fluid into the tissues or cavities of the body

Duodenum (du-o de'num) The first part of the small intestines

Dura or Dura Mater (du-rah ma'ter) The outer membrane of the brain and spinal cord

Duration (du-ra'shun) Continuance in time

Dysaphe (dis'a-fe) Disordered sense of touch.

Dysbasia (dis-ba'ze-ah) Difficulty in walking.

Dysecoia (dis e-koi'ah) Subnormal acuteness of hearing

Dysentery (dis'en-ter-e) Inflammation and ulceration of the intestinal mucous membrane with bloody evacuations

Dysgraphia (dis-graf'e-ah) An inability to write properly

Dyslalia (dis-la'le-ah) A structural defect of speech, stuttering

Dyslogia (dis-lo'je ah) An inability to reason.

Dysmenorrhea (dis-men-o-re'ah) Painful menstruation

Dysneuria (dis-nu're-ah). An impairment of nerve function

Dysopia (dis-o'pe-ah) Same as dysopsia.

Dysopsia (dis-op'se-ah) Painful or defective vision

Dyspepsia (dis-pep'se-ah) Impaired or imperfect digestion.

Dyspeptic (dis-pep'tik). Pertaining to or affected with dyspepsia.
Dysphoria (dis-fo're-ah). Restlessness.
Dysphrasia (dis-fra'ze-ah). Imperfect speech.
Dyspnea (disp-ne'ah). Difficult or labored breathing.
Dysuria (dis-u're-ah). Difficulty in discharging the urine attended with pain and a sensation of heat.

E

Ecchymosis (ek-che-mo'sis). A bruise showing on the skin; a black and blue spot.
Echinococcus (e-ki-no-kok'kus). A parasitic larva to a tapeworm peculiar to the dog. but found in other animals and in man, where it produces fatal tumors in the lungs and liver.
Ecstasy (eks'ta-se) Excessive excitement; loss of mental control.
Ectoderm (ek'to-derm). An outer layer or membrane, as the epidermal layer of the skin.
Ectopia (ek-to'pe-ah). An abnormality of position, usually congenital.
Ectopic (ek-top'ik). Pertaining to ectopia.
Eczema (ek'ze-mah). Inflammation of the skin with exudation of lymph.
Edema (e-de'mah). Accumulation of serum in the cellular tissue.
Edematous (e-dem'a-tus). Relating to or marked by edema.
Effeminate (ef-fem'i-nate). Having the qualities of the female sex.
Effervescent (ef-fer-ves'ent). Gently boiling or bubbling by means of the disengagement of gas.
Effete (ef-fete'). Barren; not capable of producing, as an animal, soil, etc.
Efficacious (ef-fi-ka'shush). Producing the effect intended.
Efflorescence (ef-flo-re'sens). Redness of the skin; rash
Effluvium (ef-flu've-um). Exhalation; vapor; odor.
Effusion (ef-fu'shun). Escape of fluid into body tissues or cavities
Efflux (ef'flux) To run or flow away.
Ejection (e-jek'shun). The process of casting out.
Elaterium (el-a-te'ri-um). A cathartic substance obtained from the fruit of the squirting cucumber.
Electuary (e-lek'tu-a-re). A medicine whose ingredients are mixed with a syrup
Elephantiasis (el-e-fan-ti'a-sis). A chronic edematous disease of the skin with hypertrophy of the cellular tissue.
Elimination (e-lim-i-na'shun). The act of discharging by the pores; excretion.
Elongation (e-lon-ga'shun) An imperfect laxation occasioned by the stretching or lengthening of the ligaments.
Emaciation (e-ma-she-a'shun). A loss of flesh; leanness.
Emanation (em-a-na'shun). An effluvium; that which proceeds from a body.
Embolism (em'bol-ism). The obstruction of a blood vessel by an embolus.
Embolus (em'bo-lus). A blood-clot or other body carried by the blood current and obstructing circulation at the point of lodgment
Emesis (em'e-sis). The act of vomiting.
Emetic (e-met'ik). An agent causing vomiting.
Eminence (em'i-nence). Elevation or height, a rising ground.
Emmenagogue (em-men'a-gog) A medicine which promotes the menstrual flow
Emollient (e-mol'yent). An agent that softens tissues.
Emphysema (em-fi-se'mah). A swelling produced by air in the tissues.
Empirical (em-pir'ik-al). Known by experience, derived from experiment; used and applied without science.
Empyema (em-pi-e'mah). Pus in the pleural cavity.
Empyreuma (em-pi-ru'ma). Burnt smell; the odor of animal or vegetable substances when burned in close vessels.
Empyreumatic (em-pi-ru-mat'ik). Pertaining to empyreuma
Emulsion (e-mul'shun). A milky fluid obtained by suspending oil in water.
Encephalic (en-se-fal'ik). Pertaining to the brain.
Encephalon (en-sef'a-lon). The brain.
Endemic (en-dem'ik). A disease peculiar to a people or nation.
Endermatic (en-der-mat'ik). Relating to a method of administering medicines through the skin by rubbing.
Endermic (en-der'mik) See endermatic.
Endocarditis (en-do-kar-di'tis). Inflammation of the lining membrane of the heart.
Endocardium (en-do-kar'di-um). The transparent lining membrane of the heart.
Enema (en'e-mah). A rectal injection of medicine or food.
Energetic (en-er-jet'ik). Forcible; powerful; efficacious.
Energy (en'er-je) The power of doing work.
Engender (en-jen'der). To produce; to cause to exist.
Engorgement (en-gorj'ment). Vascular congestion.
Enteric (en-ter'ik). Pertaining to the intestine.
Enteritis (en-ter-i'tis). Inflammation of the intestines.
Environment (en-vi'ron-ment). The aggregate of surrounding influences
Ephemera (e-fem'e-rah). A fever of one day's continuance only.
Epidemic (ep-i-dem'ik). A prevailing disease among a people or nation.
Epidermis (ep-e-der'mis). The outer layer of the skin.
Epigastrium (ep-e-gas'tre-um). The region over the stomach.
Epiglottis (ep-e-glot'is). A thin cartilaginous plate over the larynx.
Epiglottitis (ep-e-glot-i'tis). Inflammation of the epiglottis.
Epilepsy (ep'il-ep-se). A nervous disease with loss of consciousness and tonic and clonic convulsions.
Epileptiform (ep-il-ep'ti-form). Resembling epilepsy.
Epilose (ep'i-los). Without hair; bald.
Epispastic (ep-i-spas'tik) A blister.
Epistaxis (ep-is-taks'is). Hemorrhage from the nose
Epithelial (ep-ith-e'le-al). Pertaining to epithelium.
Epithelium (ep-ith-e'le-um). The cells covering all cutaneous and mucous surfaces together with the secreting cells of glands developed from ectoderm.
Epizootic (ep-e-zo-ot'ik). An epidemic among animals.
Epoch (ep'ock). Any fixed time or period.
Epulis (ep-u'lis). A small, elastic tumor of the gums.
Ergot (er'got). A fungus parasitic upon rye.
Ergotin (er'go-tin). A name for various active extracts of ergot.
Erigeron (e-rig'e-ron). A genus of herbs.
Erosin (e-ro'shun). Ulceration; an eating or wearing away
Eructation (e-ruk-ta'shun). Belching.
Eruption (e-rup'shun). A breaking out, as in a skin disease.

Eruptive (e-rup'tiv). Characterized by a rash or an eruption.

Erysipelas (er-i-sip'e-las). An acute specific inflammation of the skin and subcutaneous tissues, accompanied by fever and constitutional disturbances.

Erysipelatous (er-i-si-pel'a-tus). Pertaining to erysipelas.

Erythema (er-ith-e'mah). A superficial blush or redness of the skin.

Eschar (es'kar). A dry slough or crust of dead tissue.

Escharotic (es-kar-ot'ik). A substance producing an eschar.

Esophagus (e-sof-a-gus). Canal from the pharynx to the stomach.

Essence (es-ens). The inherent qualities of a drug

Ester (es'ter). A compound ether containing both an acid and an alcohol radicle.

Ether (e'ther). The subtle fluid filling all space. It is an anesthetic.

Etiology (et-e-ol'o-je) The science of the causes of disease.

Eustachian Artery (u-sta'ke-an ar'ter-e). A branch of the vidian artery

Evacuant (e-vak'u-ant) A medicine which causes evacuations of the bowels

Evacuation (e-vak-u-a'shun). Defecation, the act of emptying or clearing the contents.

Evaporate (e-vap'o-rate). To convert from a solid or liquid state into vapor.

Evaporation (e-vap-o-ra'shun). A turning into vapor.

Evince (e-vince'). To manifest, to make evident.

Evolution (ev-o-lu'shun). The process of developing from a simple to a complex, specified, perfect form.

Evulsion (e-vul'shun). A forcible tearing away of a part

Exacerbation (eks-as-er-ba'shun). Increased severity of symptoms.

Exaggerated (eks-a'ger-a-ted). Enlarged; unduly increased.

Exanthem or Exanthema (eks-an'them). An eruption of the skin.

Exanthematous (eks-an-them'a-tus). Pertaining to an exanthem

Excipient (eks-sip'e-ent) Any substance combined with an active drug to give the latter an agreeable or convenient form.

Excitant (eks-si'tant) A medicine which arouses the vital activity of the body

Exclusion (eks-klu'shun) A shutting out, the state of being excluded.

Excoriation (eks-ko-re-a'shun) A wound of the skin caused by rubbing

Excrement (eks'kre-ment). The feces.

Excrementitious (eks-kre-men-tish'us). Pertaining to the feces

Excrescence (eks-kres'cence). An abnormal outgrowth on the body, as a wart.

Excreta (eks-kre'tah). The natural discharges of the body.

Excrete (eks-kret') To throw off effete material

Excretion (eks-kre'shun). The discharge of the waste products of the body

Excretory (eks'kre-to-re). Pertaining to excretion.

Excruciating (eks-kru'si-a-ting). Torturing; tormenting, most severe pain.

Exertion (ex-er'shun). The act of putting into motion; effort; a striving or struggling.

Exfoliation (eks-fo-le-a'shun). The scaling off of dead tissue.

Exhalation (eks-hal-a'shun). The vapor given off by the body.

Exhaustion (eks-aws'chun). Great loss of vital power.

Exhilarant (eks-il'a-rant). An agent enlivening the mind

Exhilarating (eks-il'a-rat-ing). Enlivening; giving life and vigor to the spirit

Exhumation (eks-hu-ma'shun). Disinterment of a corpse

Exostosis (eks-os-to'sis). An abnormal outgrowth of a bone

Expectorant (eks-pek'to-rant). A medicine promoting a secretion of bronchial mucous.

Expectoration (eks-pek-to-ra'shun) The expulsion of the secretions from the chest

Expiration (eks-pi-ra'shun). The act of breathing out, conclusion, end, close.

Exsiccation (eks-sik-ka'shun). The process of drying by heat

Extensor (eks-ten'sor). A muscle which causes extension of a part.

Exterminator (eks-ter'min-a-tor). That which destroys.

External (eks-ter'nal). Outer.

Extravasation (eks-tra-va-sa'shun). An effusion of fluid into the tissues.

Extremity (eks-trem'i-te) A limb, an end or a termination

Exudation (eks-u-da'shun) A morbid oozing out of fluids, sweating

F

Facial (fa'shal). Pertaining to the face.

Facies (fa'she-ez). The countenance

Facultative (fak'ul-ta-tive) Pertaining to functional or acquired power.

Faculty (fak'ul-te) Specific power The corps of professors in a college.

Faradic (far-ad'ik) Pertaining to induced electric currents.

Faradization (far-a-di-za'shun). The treatment of a nerve with faradic or induced currents of electricity

Farina (far-e'nah). The powdered starch of grain.

Farinaceous (far in-a'she-us). Having the nature of farina

Fascia (fash'e-a). A thin covering of the muscles.

Fascination (fas in-a'shun). Inexplicable or hypnotic influence.

Faucet (faw'set). A fixture for drawing liquid from a vessel

Febricula (feb-rik'u-lah). A mild fever of short duration.

Febrifacient (feb ri-fa'shent). Producing fever.

Febrifuge (feb're-fuj) An agent that lessens fever.

Febrile (feb'ril). Pertaining to fever.

Feces (fe'sez). Excrement, the discharge of the bowels

Feculent (fek'u-lent). Foul with impure substances, abounding with sediment matter.

Femoral (fem'or-al) Pertaining to the femur.

Femur (fe'mur) The thigh-bone.

Ferment (fer'ment) A substance which in small quantities is capable of setting up changes in another substance without itself undergoing much change

Ferruginous (fer-ru'ji-nus). Containing iron.

Fetid (fet'id). Having an offensive smell.

Fetor (fe'tor). Any strong, offensive smell.

Fetus (fe'tus) The product of conception after the fourth month of gestation.

Fiber (fi'ber). A filamentary or thread-like structure.

Fibrin (fi'brin). A nitrogenous proteid coagulating in exposed blood.

Fibrinous (fi'brin-us) Composed of fibrin.

Fibroid (fi'broid). Having a fibrous structure.

Fibrosis (fi-bro'sis). The development of fibrous tissue in an organ.

Fibrous (fi'brus) Consisting of or pertaining to fibers.
Filtration (fil-tra'shun). The process of straining or filtering.
Filament (fil'a-ment). A thread-like structure.
Fimbria (fim'bre-ah). A fringe.
Fissure (fish'ur) A grove or cleft.
Fistula (fis'tu-lah). An abnormal tube-like passage in the body.
Flaccid (flak'sid). Soft, flabby and relaxed
Flagellation (flaj-el-a'shun). Flogging, recommended as a means of checking pospartum hemorrhage.
Flashing-point (flash'ing-point). The temperature at which gas from an oil will ignite if brought into contact with a flame
Flatulence (flat'u-lence). The presence of gas n the digestive canal
Flatus (fla-tus) Gas in the alimentary canal.
Flector (flek'tor) A flexor.
Flexibilitas (fleks-i-bil'i tas) Flexibility.
Flexibilitas Cerea (fleks-i bil'i tas se're-a). A cataleptic condition in which the limbs remain fixed as they are placed
Flexible (fleks'i-ble). That which may be bent
Flexor (fleks'or). A muscle that bends or flexes a part.
Flexura (fleks-u'rah) A bending or curve in an organ.
Flocculent (flok'ku-lent) Containing shreds, flaky.
Fluctuation (fluk-tu-a'shun). A wave-like motion
Flushing (flush'ing). To cleanse by forcing water through A glow of red in the face.
Flux (fluks) Dysentery; a liquid flow or discharge.
Fœtus (fe'tus) Same as fetus.
Follicle (fol'ik-l). A small secretory cavity or sac
Follicular (fol-ik'u-lar). Containing follicles
Fomentation (fo-men-ta'shun). The application of warm liquids to the body.
Fontanel (fon-tan-el') A membranous space at the junction of the cranial bones in an infant, due to incomplete ossification
Foramen (for-a'men). A passage or an opening.
Forceps (for'seps). A two-bladed instrument for grasping objects firmly.
Formication (for-mi-ka'shun) A creeping sensation.
Formula (form'u-lah). A prescribed method; a recipe.
Fornices (for'ni-ses) Plural of fornix.
Fornicolum (for'ne-kol-um). Anterior pillar of fornix
Fornix (for'niks). An arched portion of the brain composed of the two hippocampus and their respective fimbrias
Fortification Spectrum (for-ti-fi-ka'shun spek'-trum). See teichopsia.
Fracture (frak'chur) The breaking of a bone
Frenzy (fren'ze). Violent mania.
Friable (fri'a-bl) Easily broken or pulverized.
Friction (frik'shun) The act of rubbing
Frigid (frij'id) Cold, stiff, apathetic; distant, unfeeling; irresponsive
Fugacious (fu-ga'shush). Flying or fleeing away; volatile.
Fulcrum (ful'krum). A prop or support
Fuming (fum'ing). Smoking, raging, fretting
Function (funk'shun). The normal or special action of a part.
Functional (funk'shun-al). Pertaining to function.
Fundament (fun'da-ment). The base; the anus.
Fungi (fun'ji). A section of saprophytic cryptograms.
Fungoid (fun'goid). Having the appearance or character of a fungus.
Fungous (fun'gus). Pertaining to a fungus.
Fungus (fun'gus). A spongy, morbid growth.
Fusion (fu'shun) The process of liquefying a solid by heat.
Fustigation (fus-ti-ga'shun) Flagellation, as in passage.

G

Galvanic (gal-van'ik). Pertaining to galvanism.
Galvanism (gal'van-ism). A form of electricity produced by chemic reaction.
Galvanization (gal-van-i za'shun) The transmission of a galvanic current through a part of the body
Ganglioma (gang-le-o'mah). A swelling of a lymphatic gland.
Ganglion (gan'gli-on) A semi-independent nervous center. An enlarged lymphatic gland.
Ganglionic (gang-le-on'ik). Pertaining to a ganglion.
Gangrene (gang'gren). The mortification or death of soft tissue
Gargle (gar'gl) A wash for the throat To wash the throat
Garlic (gar'lik) The plant Alium Sativum. It is a tonic.
Gaseous (gas'e-us). Of the nature of gas.
Gastric (gas'trik) Pertaining to the stomach.
Gastricism (gas-tris'ism) Dyspepsia.
Gastritis (gas-tri'tis). Inflammation of the stomach
Gastroenteric (gas-tro-en-ter'ik). Pertaining to both stomach and intestines
Gastroenteritis (gas tro-en-ter-i'tis). Inflammation of the stomach and bowels.
Gastrointestinal (gas-tro-in-tes'tin-al). See gastroenteric
Gelatin (jel'a-tin). A nitrogenous principle obtained by boiling certain animal tissues, as cartilage, ligaments, etc.
Gelatinous (je-lat'i-nous). Resembling gelatin, jelly like.
Generation (jen-er-a'shun). The begetting of offspring
Generative (jen-er-a'tive). Pertaining to generation
Genital (jen'i-tal). Pertaining to the organs of generation
Genitalia (jen i-ta'li-ah). The organs of generation
Genitourinary (jen-i-to-u'ri na-re). Pertaining to both genital and urinary organs.
Germicide (jer'mi-sid). An agent destroying germs.
Germination (jer-min-a'shun). The development of a seed or germ.
Geromorphism (jer-o-morf'ism). The appearance of age in a young person.
Gerontic (jer-on'tik). Pertaining to old age
Gestation (jes-ta'shun). The act of carrying young in the womb from conception to delivery
Giddiness (gid'e-nes). A sensation of whirling.
Ginglymus (ging'glim-us). A hinge-joint.
Glairy (glar'e). Slimy, albuminous
Gland (gland). An organ which secretes some fluid from the blood
Glandular (glan'du lar). Pertaining to a gland.
Glaucoma (glaw-ko'mah). A disease of the eye characterized by increased intraocular tension.
Gleet (glete) A mucous discharge, especially from the urethra, a thin ichor running from a sore
Gleety (gle'te). Resembling or affected with a gleet.
Glioma (gli-o'mah). Tumor composed of neuroglia
Globular (glob'u-lar) Shaped like a globe.
Globule (glob'ul). A small spheric body.
Glossa (glos'ah). The tongue.

Glossography (glos-og'ra-fe). A description of the tongue.

Glossohyal (glos-o-hi'al). Pertaining to the tongue and hyoid bone.

Glottis (glot'tis). Aperature between the arytenoid cartilages of the larynx.

Gluteal (glu'te-al). Pertaining to the buttocks.

Glutinous (glu'ti-nus). Resembling or containing glue.

Glycerin (glis'er-in). The sweetish principle of oils and fats.

Glycyrrhiza (glis-er-i'zah). A genus of plants and also the demulcent root of licorice root.

Gnathitis (na-thi'tis). Inflammation of the jaw.

Gnathoplasty (na'tho-plas-te). A plastic operation, the jaw.

Goiter or Goitre (goi'ter). An enlargement of the thyroid gland.

Gonagra (gon-a'grah). Gout of the knee.

Gonecystic (gon-e-sis'tik). Pertaining to the seminal vesicles.

Gonecystitis (gon-e-sis-ti'tis). Inflammation of a seminal vesicle

Gonyalgia (gon-e-al'je-ah). Pain in the knee.

Gonyocele (gon'e-o-sel). White swelling of the knee.

Gout (gowt). A disease associated with joint inflammation, swelling, uric acid in the blood, etc

Granular (gran'u-lar). Composed of grains or granulations.

Granulation (gran-u-la'shun). Formation of small elevations on a healing surface.

Granule (gran'ul). A small rounded grain. A spore.

Graphite (graf'ite). A native form of carbon

Gray Matter (gra mat'ter). The cortical substance of the brain

Grip or Grippe (grip) See influenza.

Groin (groin). The depression between thigh and trunk.

Groove (groov). A furrow, channel, crease or fold.

Grumous (gru'mus). Thick, viscid; clotted.

Gullet (gul'et). See esophagus

Gutta-percha (gut'ah per'cha). The flexible concrete juice of an East India tree. It is used as a protective application.

Gymnastics (jim-nas'tiks). Systematic bodily exercise.

Gypsum (jip'sum) Native calcium sulphate.

H

Hallucination (hal-lu-si-na'shun). A false perception or image.

Harmonia (har-mo'ne-ah). A suture between two bones in which the opposed surfaces are smooth

Harmonious (har mo'ne-us). Having the parts proportioned to each other

Harmonizing (har'mo-niz-ing). See harmonia

Hartshorn (hartz'horn) Ammonia.

Haschisch (hash'ish) A narcotic and intoxicating preparation of the plant called Indian hemp.

Hectic (hek'tik). The fever of advanced disease.

Hectic Flush (hek'tik flush). Reddening of the cheeks in tuberculosis.

Helonin (hel-o'nin). An extract. It is diuretic and anthelmintic

Hematemesis (hem-a-tem'e-sis). The vomiting of blood

Hematimeter (hem-a-ti-me'ter) See hematocyometer.

Hematocytometer (hem-at-o si-tom'et-or). A device for counting the corpuscles in a given volume of blood.

Hematoma (hem-a-to'mah). A tumor containing blood.

Hemicrania (hem-e-kra'ne-ah). Neuralgia of half of the head. Imperfect development of half of the skull.

Hemiplegia (hem-e-ple'je-ah). Paralysis of one side of the body.

Hemoptysis (hem-op'ti-sis). The spitting of blood.

Hemorrhage (hem'or-age). A flow of blood from the vessels

Hemorrhoid (hem'or-oid). A pile; a small blood tumor at the anus opening.

Hepatic (he pat'ik). Pertaining to the liver

Hepatica (he-pat'i-ka). Medicines affecting the liver

Hepatitis (hep-a-ti'tis). Inflammation of the liver.

Herbivorous (her-biv'o-rus). Eating vegetation.

Heredity (he-red'i-te). The influence of parents upon offspring.

Hermetic (her-met'ik). Protected from air; air tight

Hernia (her'ne-ah). The protusion of a viscus from its normal position.

Herpes (her'pez) A skin disease with patches of distinct blisters.

Hiccough (hik'kup). A spasmodic inspiration suddenly arrested by an involuntary closure of the glottis

Hiccup (hik'kup) Same as hiccough.

Hinge-joint (hinj'-joint). See diarthrosis.

Hippocampus (hip po kam'pus). Either of two convolutions of the brain—hippocampus major being a large white curved body in the inferior cornu of the lateral ventricles of the brain and hippocampus minor a small eminence of white substance in the posterior cornu.

Hippocratic (hip'po-krat'ik) Of or belonging to Hippocrates, a celebrated physician of Greece, regarded as the father of medicine

Homogenesis (ho-mo-jen'e-sis). The generation of offspring experiencing the same cycle of developmental changes as the parent

Homogenous (ho-moj'e-nus). With like offspring.

Homogeny (ho-moj'e-ne). With like offspring

Hordeum (hor'de-um). Barley.

Humanity (hu-man'i-te) The quality of being human.

Humeral (hu'mer-al). Pertaining to the humerus.

Humerus (hu'mer-us). The large bone of the upper arm.

Humid (hu'mid). Moist; damp

Humor (hu'mor). Any fluid of the body.

Humus (hu'mus). A dark material from decaying vegetable matter.

Hyaline (hi'a-lin). Glassy; crystalline; transparent

Hydracid (hi-dras'id). Any hydrogen acid containing no oxygen.

Hydragog (hi'dra gog). Purgative; causing watery discharges.

Hydrocephalic (hy-dro-sef-a'lik). Pertaining to hydrocephalus.

Hydrocephalus (hy-dro-sef'al-us). A collection of water in the head, dropsy of the brain.

Hydrochloric (hi-dro-klo'rik). Consisting of hydrogen and chlorin.

Hydrogen (hi'dro jen) An elementary substance existing at ordinary temperatures as a colorless, tasteless and inodorous gas, the lightest of all known substances. It forms one-ninth of the weight of water and is present in almost all organic compounds.

Hydropathic (hi-dro-path'ik). Pertaining to hydropathy.

Hydropathy (hi-drop'a-the). The treatment of disease by the use of water.

Hydrothorax (hi-dro-tho'raks). Dropsy of the chest.

Hygiene (hi'je-en) The science of health.

Hygienic (hi-je-en'ik). Pertaining to hygiene.

Hylic (hi'lik). Pertaining to the pulp tissues of the embryo.

Hyloma (hi-lo'mah). Any tumor arising in hylic or pulp tissues.

Hymen (hi'men). The membrane which covers the mouth of the vagina

Hyoid Bone (hi'oid bone). The bone at the root of the tongue.

Hyperesthesia (hi-per-es-the'se-ah). Excessive sensibility

Hypermnesis (hi-perm-ne'sis). An abnormal power of memory.

Hyperosmia (hi-per-oz'me-ah). A morbidly acute sense of smell.

Hypertrophic (hi-per-tro'fik). Affected with hypertrophy

Hypertrophy (hi-per'tro-fe) Abnormal increase in the size of an organ or a part.

Hypnotic (hip-not'ik) An agent causing sleep

Hypochrondrium (hi-po-kon'dre-um) The region of the abdomen at each side of the epigastrium

Hypodermatomy (hi-po-der-mat'o-me). Subcutaneous incision

Hypodermatic (hi po-der-mat'ik) See hypodermic

Hypodermic (hi po-der'mik) Subcutaneous, applied to injections of medicines

Hypogastrium (hip-o-gas'tri-um). The lower part of the abdomen

Hypophosphite (hi-po-fos'fit). A salt of hypophosphorous acid.

Hyposmia (hi poz'me-ah) A diminution in the sense of smell

Hypothalamus (hi-po-thal'am-us) Name given to the structures of the fore-brain under the thalmus

Hypotrophy (hi-pot'ro-fe). Defective nutrition

Hysteria (his-ter'e-ah) A nervous affection in which the patient loses control of the emotions through loss of will-power.

Hysterial (his-te're-al). Of the nature of hysteria.

I

Ichor (i'kor). A colorless matter flowing from an ulcer

Ichthyocolla (ik-the-o-kal'ah) Isinglass; fish-glue; a gelatin made from the air gladders of a fish.

Ichthyol (ik'the-ol) A liquid prepared from mineral pitch and used in skin diseases

Icteroid (ik'ter-oid). Resembling jaundice.

Idiocy (id'e-o-se) A condition of extreme mental deficiency

Idiopathic (id-e-o-path'ik). Spontaneous; primary

Idiosyncrasy (id-e-o-sin'kra-se). Individual peculiarity.

Idiot (id'e-ot) A person with defective mental development

Illuminant (il-lu'mi-nant). That which affords light

Imitable (im'i-ta-ble). Capable of being imitated or copied

Immersed (im-merst'). Covered by water or other fluid, plunged.

Immersion (im-mer'shun) The plunging of a body into a liquid

Immune (im-mun'). Safe from attack; protected by vaccination.

Immunity (im-mu'ni-te). Freedom from risk of infection.

Immunization (im mu-ni-za'shun). The act of rendering immune.

Impervious (im-per've-us). Not permitting a passage.

Impetigo (im-pet'i-go). An acute pustular inflammation of the skin.

Impotence (im'po-tense). Vant of strength or power, physical, intellectual, or moral; weakness, defect of power to perform anything.

Impregnate (im-preg'nate). To fertilize or make pregnate.

Impregnation (im-preg-na'shun). The act of impregnating; the state of becoming impregnated.

Impressible (im-pres'-ible). Capable of being impressed.

Impression (im-presh'un). A hollow or depression

Impurity (im-pu'ri-te). That which is impure; foul matter.

Inanimate (in-an'i-mate). Destitute of life; dead, dull; inactive.

Inanition (in-ah-nish'un). Emptiness; exhaustion from fasting.

Inarticulate (in-ar-tik'u-late). Vocal sounds not arranged into syllables.

Incoherent (in-ko-he'rent). Not connected or coherent

Incontinence (in-kon'ti-nense). Involuntary evacuation.

Incubation (in-ku-ba'shun). The time elapsing from exposure to a disease until symptoms appear

Incus (in'kus). The middle bone of the inner ear.

Indigenous (in-dij'e-nus). Native; produced in a country

Indolent (in'do-lent) Sluggish, of slow growth.

Indurated (in-du-ra'ted) Hardened

Induration (in-du-ra'shun). The hardening of a tissue or part.

Indurative (in'du-ra-tiv). Pertaining to induration.

Inebriant (in-e'bre-ant). An intoxicating substance

Inebriation (in-e-bre-a'shun). A drunken condition

Inertia (in-er'shah) Sluggishness; inactivity.

Infant (in'fant). A baby, less than two years of age

Infantile (in'fan-til). Pertaining to infancy

Infantile Paralysis (in'fan-til pa-ral'i-sis). Acute inflammation of the anterior horns of the gray matter of the spinal cord.

Infection (in-fek'shun). The communication of disease germs.

Inferior (in-fe'ri-or) Lower.

Infiltration (in-fil-tra'shun) A fluid effusion into an organ or a tissue.

Infinite (in'fi-nite). Immeasurable, boundless; vast, countless, unbounded.

Infirm (in-ferm') Weak or feeble

Inflammation (in-flam-ma'shun). A morbid condition with pain, heat, swelling and disordered function

Inflammatory (in-flam-ma-to-re). Pertaining to inflammation

Inflation (in-fla'shun) Distended with air

Inflection (in-flek'shun). A bending inward.

Influenza (in-flu-en'zah). A contagious epidemic catarrhal fever with great prostration and varying symptoms and sequels; grip

Influx (in'fluks). An inflow

Infusion (in-fu'shun). Extracting properties by steeping The slow injection of liquid into a vein.

Ingesta (in-jes'tah) Substances introduced into the body as food.

Ingestion (in-jes'chun). The introduction of food into the body.

Ingredient (in-gre'de-ent). Any part of a compound.

Inguinal (in'gwin-al). Pertaining to the groin.

Inhalation (in-ha-la'shun). The inbreathing of air.

Inhaled (in hald'). See inhalation.

Injection (in-jek'shun). The forcing of a liquid into a cavity, part or vessel of the body.

Innervation (in-ner-va'shun). A state of nervelessness; special activity excited in any part of the nervous system.

Innominate (in-nom'i-nate) Nameless. A term applied to many parts of the body in place of more specific names.

Inoculation (in-ok-u la'shun). The introduction of specific virus into the system.

Inodorous (in-o'dor-us) Having no smell.

Inosculating (in-os'ku-lat-ing). Directly joining.

Insidious (in-sid'e-us). Not manifest; hidden or stealthy.

Insipid (in-sip'id). Wanting the qualities which affect the organs of taste, flat in taste

Insoluble (in-sol'u-ble) Incapable of solution

Insomnia (in-som'ne-ah) Inability to sleep.

Inspiration (in-spi-ra'shun). The inhalation of air into the lungs.

Integument (in-teg'u-ment). A covering, especially the skin.

Intellect (in'tel-ekt). The mind or the reasoning power.

Intellection (in-tel-ek'shun). Mental activity

Intemperance (in-tem'per-ance). The immoderate use of food or drink or both.

Intensity (in-ten'si-te) A high degree of power or activity.

Intercellular (in-ter-sel'u-lar) Between cells

Intercostal (in-ter-kos'tal). Between the ribs.

Interglobular Spaces (in-ter-glob'u lar spa'sez). Certain irregular areas near the outside of the teeth

Interlobular (in-ter-lob'u-lar). Between lobules

Interment (in-ter'ment) The burial of the dead.

Intermittent (in-ter-mit'ent). Occurring at intervals

Internal (in-ter'nal) On the inside.

Interstices (in-ter'sti-sez). Spaces, intervals; pores

Interstitial (in-ter-stish'al). Lying or placed between

Intestinal (in-tes'ti-nal). Pertaining to the intestines of the animal body

Intestine (in-tes'tine). The digestive tube from the stomach to the anus

Intima (in'tim-ah). The innermost coat of the vessels.

Intimitis (in-tim-i'tis). Inflammation of an intima.

Intraocular (in-trah-ok'u-lar). Within the globe of the eye

Intravenous (in-trah-ve'nus). Within a vein

Intrinsic (in-trin'sik). Inherent; inward. Peculiar to a part.

Introversion (in-tro-ver'shun). A turning inward.

Intuitively (in-tu'i tive-le) By immediate perception, without reasoning

Intussusception (in-tus-sus-sep'shun) The falling of one part of an intestine into another.

Inunction (in-ungk'shun). The act of rubbing in an ointment

Iodid (i'o-did). A compound of iodin.

Iodin (i'o-din) A poisonous nonmetallic element with a metallic luster, used in medicine as an alterative.

Iodoform (i-o'do-form). A yellow antiseptic powder used largely in medicine.

Ipecac (ip'e-kak). See ipecacuanha.

Ipecacuanha (ip-e-kak-u-an'ha) The roots of tropical herbs and shrubs used as an emetic, expectorant and cholagog.

Iridectomy (ir-id-ek'to-me). The cutting of part of the iris.

Iris (i'ris) The colored membrane of the anterior part of the eye.

Iritis (i-ri'tis). Inflammation of the iris.

Irrigate (ir'ri-gate). To wash out.

Irritable (ir'ri-ta-ble). Easily inflamed or irritated

Irritation (ir-ri-ta'shun) Excitement, stimulation.

Isinglass (i'zing-glas). A pure gelatin made chiefly from the air bladders of sturgeons.

Isolation (i-so-la'shun). The seclusion of patients with contagious diseases.

J

Jactitation (jak-ti-ta'shun). Restlessness; a moving to and fro.

Jamaicin (ja-ma'sin). Bitter cathartic substance from the bark of the cabbage tree

Jaundice (jawn'dis). A yellow coloration of the skin.

Jaw (jaw). Either of the two maxillary bones serving the purpose of seizing and masticating the food

Jecur (je'ker). The liver.

Jejunal (je-ju'nal). Pertaining to jejunum.

Jejunitas (je-ju'ni-tas). Fasting

Jejunum (je-ju'num). The upper two-fifths of the small intestine

Jugal (ju'gal). Connecting or uniting.

Jugular (ju'gu-lar) Pertaining to the throat.

Jugulation (jug-u-la'shun) The swift arrest of disease by therapeutics

Julep (ju'lep). A sweetened liquid medicine.

K

Kalium (ka'le-um). See potassium.

Karyon (kar'e-on) The cell nucleus.

Karyoplasm (kar'e-o-plasm) The nuclear substances of a cell.

Kefir (ke'fer) See kephyr.

Kenophobia (ken-o-fo'be-ah). A fear of large empty spaces

Kephyr (ke'fer) A variety of fermented milk

Kerasin (ker'a-sin) A cerebrosid occurring in brain-tissue.

Keratitis (ker a-ti'tis). Inflammation of the cornea.

Kerion (ke're-on). A pustular scalp disease.

Kidney (kid'ne). The organ secreting urine.

Kinesipathy (kin-e-sip'a-the). The gymnastic treatment of disease.

Kinesodic (kin-e-sod'ik) Pertaining to motor impulses.

Kinesthesis (kin-es'the-sis). The sense by which muscular movement is appreciated

Kleptomania (klep-to-ma'ne-ah) A morbid desire to steal.

Kola (ko'lah) The seeds of Cola Acuminata, used as a nervine and cardiac stimulant

Kumis (koo'mis). Fermented mare's milk.

L

Labia (la'bi-ah). The lips.

Lachrymal (lak'ri-mal). Pertaining to or secreting tears

Lactation (lak-ta'shun). The function of secreting and excreting milk

Lacteal (lak'te-al). Pertaining to milk. One of the lymphatics of the small intestine that takes up chyle.

Lactopeptine (lak-to-pep'tin) The proprietary name for a mixture of pepsin diastase and pancreatin with lactic and hydrochloric acid.

Lamina (lam'in-ah). A thin layer or scale.

Laminated (lam'i-na-ted) Arranged in layers.

Lamination (lam-i-na'shun) Arrangement in plates or layers.

Lancet (lan'set). A two-edged surgical knife.

Lancinating (lan'si-na-ting). Piercing; darting; as a pain.
Languor (lan'gwer). Lassitude; feebleness, weakness
Larva (lar'va). An insect in its earliest form after leaving the egg.
Laryngitis (lar-in-ji'tis). Inflammation of the larynx
Laryngophthisis (lar-in-gof-thi'sis). Tuberculosis of the larynx
Laryngoplasty (lar-in'go-plas-te). Plastic surgery of the larynx
Laryngoscope (lar-in'go-skop). An instrument for the examination of the larynx.
Laryngoscopy (lar-in gos'ko-pe). Inspection of the larynx
Laryngospasm (lar in-go-spasm) Spasmodic contracture of the glottis.
Laryngotomy (lar-in-got'o-me). The operation of cutting into the larynx.
Larynx (lar'ingks) The upper part of the windpipe, organ of voice
Lassitude (las'si-tude) Weakness, exhaustion; dullness, weariness
Latent (la'tent) Concealed; not manifest.
Lateral (lat'er al). Pertaining to the side.
Laudanum (lod'an-um) Tincture of opium
Lavandula (lav-an'du-lah) A genus of plants
Laxative (laks'a-tiv) A mild purgative.
Leech (lēch). A blood-sucking aquatic worm
Legume (leg'um) A pod or cod, as a pea-pod as a peascod
Legumin (leg-u'min). A nitrogenous proteid from legumes, as peas, beans, etc.
Leptandra (lep-tan'drah). The laxative root of veronica virginica.
Leptandrin (lep-tan'drin). A purgative resinoid from leptandra
Lesion (le'zhun) Structure tissue-change from injury or disease, a hurt or wound.
Lethargy (leth'ar je). A condition of drowsiness.
Leucorrhea (lu-ko-re'ah). A white discharge from the vagina
Lichen (li'ken). A papular inflammation of the skin.
Licorice (lik'o-ris) The root and extract Glycyrrhiza glabra.
Lienteric (li-en-ter'ik) Pertaining to a special form of diarrhœa.
Ligament (lig'a-ment) A band of fibrous tissue binding parts together.
Ligamentum (lig-a-men'tum). A ligament.
Ligation (li-ga'shun). The operation of tying, as of an artery
Ligature (lig'a-chur). The material used for tying
Lincture (link'ture). A soothing cough medicine
Liniment (lin'i-ment). A liquid preparation for external use
Liquid (lik'wid). A substance that flows.
Liquorice (lik'o-ris). Same as licorice.
Lithontriptic (lith-on-trip'tik). A medicine which destroys a stone in the bladder.
Lithotomy (li-thot'o-me) The operation of cutting for stone in the bladder.
Lithotrity (li-thot'ri-te) The operation of breaking a stone in the bladder into small pieces capable of being voided
Livid (liv'id). Discolored from the effects of congestion or contusion; black and blue.
Lobe (lob). A rounded division of an organ.
Lobule (lob'ul). A small lobe.
Lochia (lo-ki'ah) The evacuations which follow childbirth
Locomotion (lo-ko-mo'shun). Animal movement
Longevity (lon-jev'i-te). Long life.
Lotion (lo'shun). Any medicinal solution for external use.
Lumbago (lum-ba'go). Pain in the loins.
Lumbar (lum'bar). Pertaining to the loins.
Lunar Caustic (lu'nar kaws'tik). Silver nitrate.
Lung (lung). One of the two organs of respiration.
Lymph (limf). A colorless alkaline fluid in the lymphatics.
Lymphatics (lim-fat'iks). The lymph-tubes of the body; vessels which carry lymph.
Lyra of the Fornix (li'rah for'niks) The harp-like portion of the fornix formed by cross-lying fibers running from one crus fornices to the other as they come together.
Lysis (li'sis). Gradual decline of a disease, especially a fever.

M

Maceration (mas-er-a'shun). Steeping in fluid; softening.
Magnesia (mag-ne'ze-ah). Magnesium oxid; a laxative.
Malady (mal'a-de). An illness or disease.
Malaise (ma-laz'). A feeling of uneasiness or discomfort.
Malaria (ma-la'ri-a). An infectious disease caused by a blood-parasite
Malarial Fever (ma-la're-al fe'ver) The periodic fever of malaria
Malassimilation (mal-as sim-i-la'shun). Imperfect assimilation or nutrition, faulty digestion, conversion and appropriation of nutriment.
Malformation (mal-for-ma'shun). Ill or wrong formation An abnormal shape or structure
Malignant (ma-lig'nant). Virulent, fatal
Malleolus (mal-le'o-lus). A projection of either bone of the lower leg where it joins the ankle.
Malleus (mal'e-us). A small bone of the internal ear
Mamma (mam'ah). The breast, an organ for secreting milk
Mammary (mam'a-re). Pertaining to the mammas.
Maniacal (man-ni'a-kal). Having the nature of madness.
Manikin (man'i-kin). A model of a human being
Manipulation (ma-nip-u-la'shun). Manual treatment, handling
Manipulus (ma-nip'u-lus). A handful.
Marginal (mar'jin-al). Pertaining to, or at, the border of.
Marsh-fever (marsh-fe'ver) Malarial fever.
Marvelous (mar've-lus) Wonderful, strange; exciting wonder or some degree of surprise
Massage (mas-sazh'). Manipulation; methodic pressure, friction and kneading of the body.
Mastication (mas-ti-ka'shun). The act or operation of masticating or chewing food.
Masticatory (mas'ti-ka-to-re). Chewing, adapted to perform the office of chewing food.
Mastitis (mas-ti'tis). Inflammation of the breast.
Matrix (ma'triks) A producing or containing substance, intercellular tissue, as of cartilage. The womb
Mature (ma-chur') Ripe; fully developed.
Maturity (ma-tu'ri-te) Ripeness; the state or quality of being mature.
Matzoon (mat'zun). Milk treated with a peculiar ferment
Maxilla (maks-il'ah) One of the upper or lower jawbones
Maxillary (maks'il-a-re). Pertaining to the jaws.
Maximum (maks'i-mum) The height of a disease. The largest quantity.

Meatus (me-a'tus). A passage or opening.

Meconium (me-ko'ni-um). The first fecal discharges of a new-born infant.

Medulla (me-dul'lah). The marrow in various cavities or any fatty substance resembling marrow. The spinal cord.

Medullary (med'ul-la-re) Pertaining to, consisting of, or resembling marrow.

Membrane (mem'bran). A thin enveloping or lining substance.

Membranous (mem'bran-us). Having the nature of a membrane.

Meningeal (men-in'je-al). Pertaining to the meninges.

Meninges (men in'jez) The membrane of the brain and cord.

Meningitis (men-in-ji'tis). Inflammation of the meninges

Menopause (men'o-pauz). The end of the menstrual life.

Menses (men'ses). The monthly flow of females.

Menstrual (men'stru-al). Pertaining to menstruation.

Menstruation (men-stru-a'shun). Function of the female producing menstrual flow.

Menstruum (men'stru-um) A salvent

Mesenteric (mes-en-ter'ik). Pertaining to the mesentery

Mesentery (mes'en-ter-e) The peritoneal attachment of the small intestine.

Metabolism (met-ab'o-lism) A change in the intimate condition of cells, constructve or destructive

Metamorphism (met-a-mor'fizm). See metamorphosis

Metamorphopsia (met-a-mor-fop'se ah). A visual defect with an apparent distortion of objects

Metamorphosis (met-a-mor'fo-sis). Transformation, structural change

Metastasis (me-tas'ta-sis) A change in the seat of a disease

Meteorology (me-te-or-ol'o-je). The science which treats of atmospheric phenomena

Meter (me'ter) The unit of linear measure of the metric system.

Miasm (mi'azm). See miasma.

Miasma (mi-as'ma) Infection floating in the air.

Microbic (mi-kro'bik) Pertaining to microbes

Micrococcus (mi-kro-kok'kus). A genus of fission-fungi in which the cells are spherical or oval.

Micrology (mi-krol'o-je). The science of microscopic objects.

Microorganism (mi-kro-or'gan-izm). A minute living body.

Microscopic (mi-kro-skop'ik). Minute; very small; visible only by the aid of a microscope.

Microscopist (mi-kro'skop-ist). One skilled in microscopy

Microscopy (mi-kros'ko-pe). The use of the microscope

Micturition (mik-tu-rish'un). The act of voiding urine

Midwife (mid'wif). A woman who assists women in childbirth.

Migraine (mi-gran'). A headache characterized by a vehement pain confined to one side of the head

Mildew (mil'du). The common name for any one of a number of small fungi destructive to living plants and dead vegetable substances.

Miliaria (mil-e-a're-ah). Sudamina, a disorder of the sweat-glands with obstruction of their ducts.

Minim (min'im) The smallest liquid measure; about equal to a drop.

Minimum (min'i-mum). The smallest amount

Miscarriage (mis-kar'age). The expulsion of the fetus between the fourth and sixth months of pregnancy Abortion.

Mitigated (mit'i-ga-ted) Made milder.

Mitral (mi'tral) Miter-like, applied to the left auriculoventricular valve of the heart.

Mitral Valves (mi'tral valves). The valves of the heart.

Mobile (mo'bil). Movable.

Mobile spasm (mo'bile spazm). A form of tonic spasm with slow and irregular movements of the limbs

Mobility (mo-bil'i-te). The property of being easily moved.

Molecular (mo-lek'u-lar). Pertaining to molecules.

Molecule (mol'e-kul) The smallest quantity of a substance that may exist and preserve its characteristic qualities

Molluscum (mol-lus'kum). A chronic skin disease with pulpy tumors.

Momentous (mo-men'tus). Very important; weighty; of the greatest consequence

Monogamous (mo-nog'a-mus) Upholding the practice of marrying only one

Monoxid (mon-oks'id). An oxid with one oxygen atom

Monster (mon'ster). An organism of abnormal development, especially one in which parts or organs are duplicated, a prodigy; a marvel.

Monstrosity (mon-stros'i-te). The condition of a monster; a monster

Monstrous (mon'strus) Unnatural in form; out of the common course of nature, frightful, horrible

Morbid (mor'bid). Diseased; sickly, not sound and healthful.

Morbidity (mor-bid'i te). The proportion of disease to health in a community.

Morbific (mor-bif'ik). Causing disease.

Morphea (mor-fe'ah). A skin disease in which pinkish patches show in firm lesions often leaving a scar-like marking upon their disappearance

Mortal (mor'tal) Liable to death deadly.

Mortality (mor-tal'i-te) The death rate. The state of being mortal.

Mortification (mor-ti-fi-ka'shun). See gangrene.

Mortify (mor'ti-fi). To lose vitality and organic structure while yet a portion of a living body, to gangrene.

Motile (mo'til). Capable of spontaneous motion.

Mucopurulent (mu-ko-pur'u-lent). Containing mucus and pus

Mucous Membrane (mu'cus mem'bran) The membrane lining all the cavities of the body which open externally.

Mucus (mu'kus) The viscid liquid secretion of mucous membrane

Mullein (mul'in). See verbascum.

Muscarin (mus'ka-rin) An alkaloid from fly-fungus.

Musculomembranous (mus-ku-lo-mem'bran-us). Composed of muscle and membrane.

Mutilation (mu-ti-la'shun). The loss of a member of an organ.

Myalgia (mi-al'je-ah). Pain in the muscles.

Myelitis (mi-el-i'tis). Inflammation of the spinal cord.

Myelon (mi'el-on). The spinal cord.

Myopia (mi-o'pe-ah). Near-sightedness, a visual defect from focalization of the image in front of the retina.

Myopic (mi-op'ik). Pertaining to myopia.

Myrrh (mur). A gum resin from Commiphora Myrrha; it is a stimulant tonic.

N

Nanism (nan'izm). Dwarfishness; the state of being undersized.

Nanous (nan'us). Dwarfed.

Nape (nap). The back of the neck; the nucha.

Narcotic (nar-kot'ik). A hypnotic allaying pain.

Nares (na'rez). Plural of naris.

Naris (na'riz). The nostril

Nasal (na'sal). Pertaining to the nose.

Nasal Bones (na'sal bones). Two small bones forming the arch of the nose.

Nasitis (na-zi'tis). Inflammation of the nose

Nausea (naw'se-ah). Sickness at the stomach, a desire to vomit.

Nauseant (naw'se-ant). A substance which produces nausea

Necrosis (ne-kro'sis). The death of a circumscribed piece of tissue.

Nematoid (nem'a-toid). Resembling a thread A thread-worm

Nephritic (ne-frit'ik). Pertaining to the kidneys

Nephritis (ne-fri'tis). Inflammation of the kidneys.

Nervine (nerv'ine). A medicine which soothes nervous excitement.

Neuralgia (nu-ral'je-ah). Pain in a nerve.

Neurilemma (nu-ril-em'ah). The sheath incasing a nerve.

Neuroglia (nu-rog'le-ah). The reticulated framework of the substance of the brain and spinal cord.

Neurolemma (nu-rol-em'ah). See neurilemma.

Neuroma (nu-ro'mah). A nerve-tumor

Neurosis (nu-ro'sis). Any disease of the nerves in which no structural change is apparent.

Nevus (ne'vus). A birth-mark.

Nidus (ni'dus). A nest. A cluster. A focus of infection.

Nitre (ni'ter). Saltpeter; nitrate of potash.

Nitrogen (ni'tro-jen) A colorless nonmetallic, gaseous element. A main constituent of air.

Nitrogenous (ni-troj'e-nus). Containing nitrogen.

Nitroglycerin (ni-tro-glis'er-in). An oily, toxic, explosive liquid

Noctambulation (nok-tam-bu-la'shun). Sleep-walking.

Nocturnal (nok-ter'nal). Pertaining to the night.

Nodal (no'dal). Relating to a node.

Node (nod). An indurated swelling on a tendon or a bone

Nodular (nod'u lar) Covered with nodes

Nonviable (non-vi'a-ble) Not able to live

Normal (nor'mal) Healthy; natural

Normoblast (nor'mo-blast). A blood corpusle of normal size.

Nosography (no-sog'ra-fe). A description of disease

Nosology (no-sol'o-je) The science of diseases, the scientific classification of diseases

Nostalgia (nos-tal'je-ah) Homesickness.

Nostrum (nos'trum). A quack or patent medicine.

Noxious (nok'shus) Harmful; poisonous

Nucha (nu'kah). See nape.

Nuclear (nu'kle-ar) Pertaining to the nucleus.

Nucleus (nu'kle-us). The controlling center of a muscle or organ. The central element in a compound

Nutriment (nu'tri-ment). Anything that nourishes

Nutritious (nu-trish'us). Yielding nourishment.

Nutritive (nu'tri-tiv). Affording nutrition.

O

Obese (o-bes'). Extremely fat; corpulent.

Obesity (o-bes'i-te). Fatness, corpulence.

Object-blindness (ob'jekt blind'nes). An inability to comprehend objects seen.

Oblique (ob-lek'). Slanting; inclined.

Oblongata (ob-lon-ga'tah). The medulla oblongata.

Obstetrician (ob-ste-trish'an). One who practises obstetrics.

Obstetrics (ob-stet'riks). The science of the care of women during pregnancy, childbirth and the puerperium.

Obstinate (ob'ste-nate). Not yielding to treatment; not easily subdued.

Occipital (ok-sip'i-tal). Pertaining to the occiput.

Occiput (ok'si-put). The back part of the head.

Occlusion (ok-klu'shun). The blocking up of an opening

Ocher or Ochre (o'ker). Yellow colored clay.

Odorant (o'dor-ant). Odorous, fragrant; a perfume.

Odoriferous (o-dor-if'er-us). Yielding an odor; sweet of scent.

Officinal (off-is'in-al). For sale by pharmacists.

Ointment (oint'ment). A soft, greasy substance or compound used for smearing over any surface, particularly the body or a diseased part

Oleaginous (o-le-aj'in-us). Having the nature of oil

Olfaction (ol-fak'shun). The sense of smell.

Olfactory (ol-fak'to-re). The organ of smell; pertaining to smelling, having the sense of smell

Opacity (o-pas'i-te). Nontransparency; darkness, obscurity.

Opalisin (o-pal-is'in). A proteid in human milk.

Ophthalmic (off-thal'mik). Pertaining to the eye.

Ophthalmoscope (of-thal'mo-skope) A perforated mirror used in inspecting the interior of the eye.

Opiate (o'pe-ate). An opium preparation; a hypnotic

Optic (op'tik). Pertaining to the eye.

Orbicular (or-bik'u-lar) Circular, spheric.

Orbicular Bone (or-bik'u-lar bone). The round prominence at the end of the incus.

Orbicular Ligament (or-bik'u-lar lig'a-ment). The circular ligament surrounding the head of the radius

Orbicularis (or-bik-u-la'ris). A name given to muscles whose fibres encircle an orifice.

Orbit (or'bit). The bony cavity for the eyeball.

Orbital (or'bit-al) Pertaining to the orbit.

Organic (or-gan'ik). Pertaining to or having organs

Organism (or'gan-ism). A living, organized being.

Orifice (or'i-fis). The mouth or aperture of a tube, pipe or other cavity

Orolingual (o-ro-ling'gwal). Pertaining to the mouth and tongue.

Orthopnea (or-thop'ne-a). A disease in which a person can breathe only when sitting up.

Oscheitis (os-ke-i'tis). Inflammation of the scrotum.

Oscillation (os-sil-la'shun). A swinging or vibration

Oscitation (os-si-ta'shun). The act of yawning or gaping.

Osculation (os-ku-la'shun). Anastomosis; the act of kissing.

Osseous (os'e-us). Bony; resembling bone.

Ossification (os-si-fi-ka'shun) The change or process of change of flesh or other matter of animal bodies into bony substances.

Otoscope (o'to-skope). An instrument for inspecting the ear.

Ovary (o'va-re). The organ of the female in which ova are formed in animals.

Ovariotomy (o-va-ri-ot'o-me). A surgical operation in which an ovary is taken out.

Ovule (o'vul). The unimpregnated ovum. Any small egglike structure

Ovum (o'vum). The female reproductive cell of an animal or vegetable, an egg.

Oxid (oks'id). Any binary combination of oxygen.

Oxidation (oks-i-da'shun). The conversion into an oxid.

Oxygen (oks'i-jen). One of the gaseous elements, the supporter of life and combustion.

Oxygenation (oks-i-jen-a'shun). Saturation with oxygen.

Oxyuris (oks-i-u'ris). A genus of nematoid worms.

Ozena (o-ze'nah). A fetid nasal ulceration and discharge.

Ozone (o'zon). An allotropic form of oxygen used as an antiseptic and oxidizing agent.

P

Pabulum (pab'u-lum). Food; anything nutritive.

Palatableness (pal'a-ta-ble-nes). The quality of being agreeable to the taste.

Palate (pal'ate) The roof of the mouth and floor of the nose.

Palatitis (pal-a-ti'tis). Inflammation of the palate.

Palliate (pal'e-ate). To soothe or mitigate

Palliative (pal'e-a-tiv). Mitigating, relieving.

Pallor (pal'or) Paleness

Palpable (pal'pa-ble). Easily perceived and detected, unmistakable, plain.

Palpitation (pal-pi-ta'shun). Violent pulsation, as of the heart

Palsy (pawl'se). See paralysis

Panacea (pan-a-se'ah). A remedy for all diseases.

Panada (pa-na'da) A food made by pouring boiling water over toasted bread, sweetening and flavoring with mace, nutmeg or wine.

Pancreas (pan'kre-us). A racemose gland in the abdomen, the sweetbread

Pancreatic (pan-kre-at'ik). Relating to the pancreas.

Pancreatin (pan'kre-a tin) A ferment from the juice of the pancreas

Papillae (pa-pil'la) A nipple of the breast The minute elevations on the surface of the skin, as on the tongue.

Papular (pap'u-lar) Consisting of papules

Papule (pap'ul). A small elevation of the skin

Paralysis (pa-ral'i-sis) Loss of sensation or voluntary motion.

Paralytic (par ah-lit'ik). A person affected with paralysis

Paraplegia (par-ah-ple'je-ah). Paralysis of the legs.

Parasite (par'a-site). An organism that inhabits another organism and obtains nourishment from it

Parasiticide (par a-sit'i-side). A substance destroying parasites

Paregoric (par-e-gor'ik). A camphorated tincture of opium.

Parenchyma (pa-ren'ki-mah). The tissue outside the blood vessels and derived from the blood; the cellular and fibrous substance of the glands and other solid organs.

Parenchymatitis (par-en-kim-a-ti'tis). Inflammation of the paremchyma

Parietal (pah-ri'e-tal). Pertaining to a wall.

Parietal Bones (pah-ri'e-tal bones). The bones forming the cranial sides and roof.

Parotid (pa-rot'id). Situated near the ear

Parotid Glands (pa-rot'id glands). The glands of the cheeks which secrete the saliva.

Paroxysm (par'oks-izm) A period of increase or crisis of a disease.

Paroxysmal (par-oks-is'mal). Pertaining to paroxysm

Parturition (par-tu-rish'un). The act of giving birth to young.

Pasteurism (pas-ter'ism). Vaccination.

Pasteurization (pas-ter-i za'shun) The destruction by heating of microbic life in a substance

Patella (pa-tel'lah). The kneepan or cap of the knee.

Patency (pa'ten-se). The condition of being open.

Pathetic (path-et'ik). That which appeals to or stirs the passions.

Pathogenic (path-o-gen'ik). Causing disease

Pathognomonic (path-og-no-mon'ik). Characteristic, peculiar to.

Pathognomy (path-og'no-me). The science of the signs by which disease is recognized.

Pathologic (path-o-loj'ik). Pertaining to pathology.

Pathologist (pa-thol'o-jist). A specialist in pathology

Pathology (pa-thol'o-je). The science of diseases.

Peat (peet). Partially carbonized vegetable material in bogs

Pectoral (pek'to-ral). Pertaining to the breast. A remedy for chest diseases

Pectoralis (pek-tor-a'lis). A muscle of the breast

Pedicle (ped'ik-l). The stalk or attachment of a tumor

Pediculus (pe dik'u-lus). The lice that infest man.

Peduncle (pe'dung kl). A supporting part.

Pedunculated (pe-dung'ku-lat-ted). Having a peduncle

Pelvis (pel'vis). The bony basin of the trunk formed by the innominate bones and the sacrum.

Pemphigus (pem'fig-us) A skin disease with an eruption of blisters

Pendulous (pen'du-lus) Hanging or drooping.

Pepsin (pep'sin) A ferment found in gastric juice

Peptone (pep'tone). A proteid derived from any native proteid through the action of hydralizing agents.

Peptonized (pep'ton-izd). Converted into peptones

Peptonoid (pep'ton-oid). A substance resembling a peptone.

Perception (per-sep'shun). The acquiring of impressions through the senses.

Perceptivity (per-sep-tiv'i-te). Capacity to receive impressions

Percolation (per-ko-la'shun). The process of extracting soluble constituents from powdered substances by allowing a solvent to trickle slowly through

Percussion (per-kush'un) Diagnosis by striking the body a sharp slight blow.

Perflation (per-fla'tion). The act of blowing through

Perforate (per'fo-rate) To pierce with holes.

Perforator (per'fo-ra-tor). An instrument to open the skull.

Pericarditis (per-e-kar-di'tis) Inflammation of the pericardium

Pericardium (per-e-kar'de-um). Membranous sac around the heart

Perineum (per-i-ne'um) The space between the thighs from anus to genitalia

Periodic (pe-re-od'ik). Occurring at intervals.

Periodicity (pe-re-o-dis'i-te). Recurrent at regular intervals.

Periodontitis (pe-re-o-don-ti'tis). Inflammation of the membrane of a tooth-socket.
Periosteal (per-e-os'te-al). Pertaining to periosteum
Periosteitis (per-e-os-te-i'tis). Inflammation of the periosteum.
Periosteum (per-e-os'te-um). The fibrous membrane investing the surface of bones except at the points of tendinous and ligamentous attachment, and on the articular surfaces where cartilage is substituted.
Periostitis (per-e-os-ti'tis). See periosteitis.
Peripheral (per-if'er-al). Pertaining to the periphery.
Periphery (per-if'er-e). The circumference or bounding line
Peristalsis (per-isi-tal'sis). The vermicular motion of the bowels
Peristaltic (per-i-stal'tik) Belonging to the vermicular contraction and motion of vascular canals, as the alimentary, the circulating, and the generative tubes
Peristole (per-is'to-le) The same as peristalsis.
Peritoneal (per-i-to-ne'al). Pertaining to the peritoneum.
Peritoneum (per i-to-ne'um). Serous membrane lining of the abdomen
Peritonitis (per-i-ton-i'tis) Inflammation of the peritoneum.
Perityphlitis (per-i-tif-li'tis). Inflammation around the cecum
Permanganate (per-man'ga-nate) A salt of permanganic acid.
Permeable (per'me-a-ble) Pervious; capable of being passed through without rupture, as solid matter
Permeate (per'me-ate) To pass through the pores ot a substance, to saturate
Pernicious (per-nish'us) Highly destructive; fatal.
Peroxid (per-oks'id) An oxid with the highest amount of oxygen
Perpetuation (per pet-u-a'shun) The act of making perpetual or preserving from extinction through an endless existence, or for an indefinite period of time
Perspiration (per-spi-ra'shun) Excretion of liquid from the skin, sweating
Pervious (per've-us). Permitting penetration
Pessary (pes'sah-re). An instrument placed in the vagina to support the uterus.
Pestilence (pes'ti-lence). Any deadly epidemic disease.
Petechia (pe-te'ke-ah). A small spot of discoloration beneath the epidermis
Petechial (pe-te'ke-al) Pertaining to petechias
Petrolatum (pet-ro-la'tum) Soft, unctuous substance obtained from petroleum
Petrous (pe'trus). Resembling stone
Phagedena (faj-e-de'nah) Gangrenous ulceration, a spreading obstinate ulcer
Pharmaceutic (far-mah-su'tik) Pertaining to drugs
Pharmacist (far'ma-sist) An apothecary or a druggist
Pharyngeal (far-in'je-al). Pertaining to the pharynx
Pharynx (far'ingks) The muscular sac behind the mouth
Phenol (fe'nol) Carbolic acid
Phenomenon (fe-nom'e-non) A symptom. Uncommon occurence
Phlebitis (fleb-i'tis) Inflammation of a vein
Phlebotomy (fle-bot'o-me) The act or practice of opening a vein for letting blood.
Phlegm (flem). Watery humor, mucus from the bronchi
Phlegmatic (fleg-mat'ik). Pertaining to phlegm Slow, dull
Phlegmon (fleg'mon). Suppurative inflammation of areolar tissue
Phlegmonous (fleg'mon-us). Of the nature of a phlegmon.
Phlogistic (flo-jis'tik). Inflammatory.
Phlyctena (flik-te'nah). A vescicle with serous contents, a blister.
Phlyctenular (flik-ten'ular). Having the nature of Phlyctenule
Phlyctenule (flik-ten'ul). A minute vesicle or phlyctena.
Phosphate (fos'fate). A salt of phosphoric acid.
Phosphorated (fos'for-a-ted). Combined with phosphorus
Phosphorus (fos'for-us). One of the elements in bone and nerve tissue.
Phrenic (fren'ik). Pertaining to the diaphragm.
Phthisical (this'ik-al). Of, belonging to, or suffering from phthisis.
Phthisis (thi'sis) or (ti'sis). A wasting or consumption.
Physiognomy (fiz-e og'no-me). The act of reading character by the study of the face.
Physiology (fiz-e-ol'o-je). The science of the functions of the body
Physiolysis (fiz-e-ol'i-sis). The falling to pieces of dead tissue
Physostigma (fi-so-stig'mah). A genus of plants.
Pigment (pig'ment). An organic coloring matter.
Pith (pith). The marrow of bones. The spinal cord.
Pityriasis (pit-i-ri'a-sis). A scaly skin disease
Placenta (pla-sen'tah) The flat, round, spongy body forming the organ of nutrition for the fetus, the after birth
Plasma (plas'mah) The fluid part of the blood and lymph.
Plasmodium (plas-mo'de um). The motile mass of protoplasm formed by the organic fusion of two or more amebiform bodies.
Plastic (plas'tik) Capable of being molded
Plasticity (plas-tis'i-te). The state of being plastic
Plethora (pleth'o-rah). Abnormal fullness of the blood-vessels.
Plethoric (pleth'o-rik). Pertaining to plethora. Full blooded
Pleura (plu'rah). The serous membrane enveloping the lungs.
Pleurisy (plu'ri-se) See pleuritis
Pleuritis (plu-ri'tis). Inflammation of pleura
Pleurodynia (plu-ro-din'e-ah) Pain in the intercostal muscles.
Plexus (pleks'us) A union of fibers, vessels or nerves in the form of network
Pneumatothorax (nu-mat-o tho'raks). See pneumothorax
Pneumogastric (nu-mo-gas'trik). Pertaining to the lungs and stomach
Pneumothorax (nu-mo-tho'raks). Gas or air in the pleural sac
Polluted (pol-lut'ed). Defiled; dishonored.
Polygamous (po-lig'a-mus) Relating to or consisting in polygamy, having a plurality of wives
Polygamy (po-lig'a me). The state of having more than one wife or husband at the same time
Polypus (pol'e-pus). A pedunculated tumor found in the nose, ear, rectum, etc
Pomade (po-made') A perfumed ointment.
Pons (ponz) A process of bridge or tissue connecting two parts
Pore (por) A minute circular opening as in the skin
Portable (port'a-ble). That may be carried.
Posterior (pos te're-or). Situated behind; toward the rear
Post-mortem (post mor'tem). An examination of a body made after death.
Post-partum (post par'tum) Subsequent to child-birth
Posture (pos'chur). Position; attitude.
Potable (po'ta-ble). Something that may be drunk; a beverage.
Potash (pot'ash). Potassium hydroxid.

Potassium (po-tas'se-um). The metallic base of potash.
Potion (po'shun). A draft. A dose
Precipitate (pre-sip'i-tate). A substance separated by precipitation
Precipitation (pre-sip-i-ta'shun). The process of having solids fall to the bottom from liquids that hold them in solution
Predisposing (pre-dis-po'zing) Inclined to, as a disease.
Predisposition (pre-dis po-zish'un). A natural tendency.
Pregnancy (preg'nan-se). The condition of being with child.
Pregnant (preg'nant). Being with young, as a female, breeding
Prehension (pre-hen'shun). The act of grasping
Premature (pre'ma-chur). Occuring before the proper time
Premonitory (pre-mon'i-to re) Having the character of a warning; indicating the onset of a disease
Preservative (pre-serv'a-tiv). Tending to keep from decay
Preventative (pre vent'a-tiv) See preventive
Preventive (pre ven'tiv). Anticipating, tending to hinder, hindering the access of, as a medicine preventive of disease
Primipara (pri-mep'a-rah). A woman bearing or giving birth to her first child
Primitive (prim'i-tiv) Original
Primordial (pri-mor'de-al). Pertaining to the beginning
Probe (prob). To examine a wound or sore by piercing it with a sharp instrument.
Process (pros'es) Experiment. Any protuberance or eminence
Procreation (pro-kre-a'shun). Reproduction or generation of young
Profunda (pro-fun'dah). A deep-seated artery
Prognosis (prog-no'sis) Prediction of course and end of a disease.
Prognostic (prog-nos'tik). Pertaining to the prognosis
Prolapsus (pro'lap-sus). The falling down of a part
Proliferation (pro-lif-er-a'shun). Cell-genesis; reproduction
Prolific (pro-lif'ik). Fruitful, generating abundantly
Pronate (pro'nate) To render prone
Pronation (pro-na'shun). The downward turning of the palm.
Pronator (pro-na'tor). A muscle pronating a part
Prone (prone) Face downward
Propagate (prop'a-gate) To have young or issue, to increase and multiply
Propagation (prop-a-ga'shun) The spreading or extension of anything
• *Prophylactic* (pro-fil-ak'tik). Pertaining to prophylaxis
Prophylaxis (pro-fil-aks'is). The prevention of a disease.
Prostration (pros tra'shun). Extreme nervous exhaustion
Proteid (pro'te-id) See protein.
Protein (pro'te-in). An organic substance found in various forms of animals and plants, albumen
Protoplasm (pro'to-plazm). Primitive organic cell-matter, germinal matter
Protoplasmic (pro-to-plaz'mik). Pertaining to protoplasm.
Protoplast (pro'to-plast). An embryonic cell, protoplasm
Protractor (pro-trak-tor). A muscle drawing forward
Protuberance (pro-tu'ber-ance) A projecting part.
Prurigo (pru-ri'go) A chronic papular skin disease with intense itching.
Pruritus (pru-ri'tus). Intense itching.
Pseudo (su'do). False
Psoriasis (so-ri'a-sis). A chronic inflammatory skin disease
Psychic (si'kik). Pertaining to the mind or soul.
Psychical (si'kik-al). See psychic
Ptyalism (ti'a lism). A morbid and copious excretion of saliva
Ptyalin (ti'a-lin). An amylolytic ferment of saliva
Puberty (pu'ber-te). The age of capability of reproduction
Pubis (pu'bis) The pubic bone
Puerperal (pu-er'per-al) Pertaining to or following child birth
Puerperium (pu-er-pe're um) The period from delivery to the completion of involution.
Pulmonary (pul'mo-na-re) Pertaining to the lungs.
Pulmonic (pul-mon'ik). Pertaining to the lungs.
Pulsation (pul-sa'shun). A beating or throbbing sensation
Pulse (pulse) The beating or rythmic throbing of the heart.
Pultaceous (pul-ta'shus). Pap-like; mushy; soft
Pulverization (pul-ver-i-za'shun) The act of reducing to a powder
Pungent (pun'jent) Acid, penetrating; severe; biting.
Purgation (pur-ga'shun). Evacuation of the bowels, cleansing
Purgative (pur'ja-tive). An agent producing watery evacuations
Purify (pu'ri-fi) To cleanse, to free from extraneous matter.
Purpura (pur'pu-rah) Hemorrhages into the true skin
Purpuric (pur'pu-rik). Pertaining to purpura.
Purulent (pu'ru-lent) Having the character of pus
Pus (pus). The fluid product of suppuration
Pustular (pus'tu-lar) Consisting of pustules
Pustule (pus'tul) An elevation of the cuticle with an inflamed base containing pus.
Putrefaction (pu-tre-fak'shun) Organic decomposition, decay
Putrid (pu'trid). Showing putrefaction; rotten
Pyemia (pi-e'me-ah). A condition in which pyogenic bacteria circulate in the blood and form abscesses wherever they lodge.
Pyogenic (pi-o jen'ik). Developing or secreting pus
Pylorus (pi-lo'rus). The lower orifice of the stomach leading into the small intestines
Pyrosis (pi ro'sis) A gastric burning pain with eructations or belching
Pyuria (pi-u're ah). The pressure of pus in the urine
Radial (ra'de-al). Pertaining to the radius
Radicle (rad'ik-l). The primary root or stem of the embryo.
Radius (ra'de-us) The small bone of the forearm
Ramification (ram-e-fi-ka'shun) Branching of an organ or a part
Ramollescence (ram-ol-les'sense). Softening of a part
Rancid (ran'sid). Fetid or sour, as fat
Rarefaction (rar-e-fak'shun). Decreasing the density of air.
Reaction (re-ak'shun) Responsive action.
Recreation (rek-re-a'shun) Refreshment of strength and spirits after toil
Rectum (rek'tum). The lower part of the large intestine.
Rectus (rek'tus). In a straight line. Name of certain muscles
Recumbent (re-kum'bent). Reclining.
Recuperation (re-ku-per'a-shun). Convalescence; return to health.

Recurrent (re-kur'rent). Returning after intermissions, as a fever.

Reducible (re-du'si-bl). Capable of reduction.

Refrigerant (re-frij'er-ant). A medicine that allays fever or heat.

Regimen (rej'i-men). The methodic use of food.

Regurgitation (re-gur-ji-ta'shun). An eructation or throwing back. Vomiting.

Rejuvenescence (re-ju-ve-nes'sense). A renewal of youth.

Relapse (re-laps'). A recurrence of a disease during convalescence.

Relaxation (re-laks-a'shun). Diminution of tension; languor; a looseness

Remission (re-mish'un). A temporary subsidence of disease or pain.

Remittent (re-mit'ent). Alternately abating and returning.

Renal (re nal) Pertaining to the kidneys

Reproduction (re-pro-duk'shun). The begetting of young

Residual (re-zid'u-al). Remaining.

Residue (rez'i-du) That which remains.

Residuum (re-zid'u-um). The balance or remainder.

Resin (rez'in). A somewhat hardened substance usually of a brownish or amber color, existing in nearly all plants and abundant in many.

Resinoid (rez'in-oid). Resembling resin

Resinous (rez'in-us). Having the nature of resin

Resolvent (re-solv'ent). That which has the power to disperse inflammation.

Respiration (res-pi-ra'shun) Inspiration and expiration of air by the lungs.

Respiratory (re-spir'a-to-re) Pertaining to respiration.

Restorative (re-stor'a-tive). Having the power to renew strength and vigor

Resuscitation (re-sus-si-ta'shun). The bringing to life of one apparently dead.

Retching (rech'ing). An unsuccessful attempt at vomiting

Reticulated (re-tik'u-la-ted). Having net-like meshes.

Retina (ret'i-nah). Internal membrane of the eye.

Retinitis (ret-i-ni'tis). Inflammation of the retina.

Retraction (re-trak'shun). Shortening; drawing backward

Retroflexion (re-tro-flek'shun). A bending or flexing backward.

Retrograde (ret'ro-grade). Receding or going backward.

Retroversion (re-tro-ver'shun) A turning back.

Revivification (re-viv-i-fi-ka'shun). Resuscitation, renewal of life, the act of recalling to life.

Revulsion (re-vul'shun). The withdrawal of blood from a diseased to a healthy part.

Rheum (room). An increased action of the excretory vessels of any organ.

Rheumatism (ru'ma-tism). A disease with fever, pain, inflammation and swelling of the joints.

Rheumatoid (ru'ma-toid). Resembling rheumatism.

Rhizome (ri'zom). A subterranean stem.

Rhizomelic (re-zom'el-ik). Affecting the roots of members

Rhizopoda (ri-zo-po'dah). Same as sarcodina.

Rhythm (rith'm). A measured periodic movement

Rigidity (ri-jid'i-te). Stiffness; immobility.

Rigor (ri'gor). A violent chill.

Rochelle Salt (ro-shel' salt). The tartrate of potash and soda.

Roseola (ro-ze'o-lah) A rose-colored efflorescence on the skin.

Rotation (ro-ta'shun). Turning on the axis.

Rotation-joint. (ro-ta'shun-joint). A lateral ginglymus.

Rotator (ro-ta'tor). A muscle turning a part.

Rubefacient (ru-be-fa'shent). A medicine that reddens the skin.

Rudimentary (ru-di-men'ta-re). Undeveloped; not formed.

Rupia (ru'pe-ah). A syphilitic eruption with incrusted foul ulcers.

Rupture (rup'chur). The breaking or laceration of an organ.

Sabadilla (sab-a-dil'ah). The dried seeds of schoenocaulon officinale. It is a drastic cathartic.

Saccharine (sak'kah-rine). Containing sugar.

Sacrum (sa'krum) The large triangular bone above coccyx.

Salicylate (sal-i'sil-ate) A salt of salicylic acid.

Saline (sa'lin). Salty; containing salt.

Saliva (sa-li'vah). The secretion of the salivary glands. Spittle

Salivation (sal-i-va'shun). The act of producing an increased secretion of saliva.

Salutary (sal'u-ta-re). Promotive of health.

Sanguine (san'gwin) Hopeful, cheerful.

Sanies (sa'ni-ez). A thin, reddish discharge from wounds or sores.

Sanitary (san'i-ta-re). Pertaining to health.

Sanitation (san-i-ta'shun). The act of making healthy.

Santonica (san-ton'i-ka). The flowerheads of Artemesia pauciflora; levant wormseed. It is a vermifuge.

Santonin (san'ton-in). The active principle of santonica.

Saphena (saf-e'nah). A name given to two large veins of the leg.

Saprophyte (sap'ro-fite) A plant deriving its sustenance from dead organic matter.

Saprophytic (sap-ro-fit'ik). Pertaining to saprophytes.

Sarcodina (sar-ko-di'nah). A class of protozoa moving and feeding by means of pseudopodia.

Saturated Compound (sat'u-ra-ted kom'pound). A chemic compound in which the combining capacities of all the elements are satisfied.

Scapula (skap'u-lah). A large, flat, triangular bone of the shoulder.

Schizomycetes (skiz-o-mi-se'tez). The fission fungi; bacteria.

Sciatic (si-at'ik) Pertaining to the hip.

Scirrhus (skir'us) A hard form of carcinoma.

Scleroderma (skle-ro-der'mah). A chronic indurated skin disease

Sclerotic (skle-rot'ik). The firm, white, outer coat of the eye.

Scorbutic (skor-bu'tik). A person affected with scurvy

Scrofula (skrof'u-lah) A constitutional condition with grandular tumor and a tuberculous tendency.

Scrofulous (skrof'u-lus). Affected with scrofula.

Scrotum (skro'tum). The pouch containing the testes.

Scurvy (skur've). A form of purpura due to deficient and improper diet.

Scutiform (sku'ti-form). Having the form of a shield

Sebaceous (se-ba'shush). Pertaining to fat or suet.

Seborrhea (seb-or-re'ah) An abnormal secretion of the sebaceous glands.

Secretion (se-kre'shun). Function of glands and follicles. Substance secreted.

Secretory (se'kre-to-re). Performing secretion.

Sedative (sed'a-tive) Soothing. An agent allaying irritability.

Sedentary (sed'en-ta-re). Occupied in sitting.

Sediment (sed'i-ment). Matter settling from a liquid.

Seidlitz Powder (sed'litz pow'der). An aperient compound effervescing powder containing potassium bitartrate and sodium carbonate.

Semiflexion (sem-i-flek'shun). Bending half over.

Seminal (sem'i-nal). Pertaining to seed or semen, or to the elements of reproduction.

Senile (se'nil). Pertaining to old age

Sensitive (sen'si-tive). Capable of feeling.

Sensual (sen'shu-al). Pertaining to or affecting the senses or bodily organs of perception.

Sepsis (sep'sis). Infection of the human system from putrid matter in the blood.

Septic (sep'tik). Relating to sepsis.

Septum (sep'tum). A dividing membrane or wall.

Sequel (se'kwel). A supervening disease.

Sequela (se-kwe'la). The results of a disease.

Seromucous (se-ro-mu'kus). Composed of serum and mucus.

Serous (se'rus). Having the nature of serum.

Serratus (ser-a'tus). A muscle of the thorax

Serum (se'rum). The fluid constituent of the blood separated by coagulation.

Sewage (su'aj). The refuse matter carried off in a sewer.

Sewerage (su'er-aj). The system of sewers.

Sexual (seks'u-al). Pertaining to sex

Sexuality (seks-u-al'i-te) The collective differences which in individuals make one male and another female

Sialogogue (si-al'o-gog). A medicine which promotes the flow of saliva.

Silica (sil'ik-ah). Silicon dioxia, found in quartz

Simulation (sim-u-la'shun). The counterfeiting of disease.

Sinapism (sin'a-pism). A mustard plaster.

Sinew (sin'u). The tough fibrous tissue which unites a muscle to a bone.

Sinus (si'nus). A hollow, cavity, recess or pocket

Skeptic (skep'tik). One who doubts the truth of any statement.

Slough (sluf) The separated dead matter in an ulceration.

Sloughing (sluf'ing). The formation of a slough

Soda Bicarbonate (so'dah bi-kar'bon-ate). Baking soda It is antipyretic and antiseptic

Solidism (sol'id-ism). The theory that ascribes disease to condensation or rarefaction of the solid tissues.

Soluble (sol'u-ble). Capable of being dissolved.

Solution (so-lu'shun) The critical period of a disease. A dilution

Solvent (sol'vent) A fluid that dissolves or makes a solution of any other body.

Somnolence (som'no-lense). The condition of drowsiness.

Sonorous (so-no'rus) Resonant; ringing

Soporific (sop-or-rif'ik) A medicine that has the quality of inducing sleep.

Sordes (sor'dez) Foul matter, execretions The dark brown matter that gathers on the tongue and teeth in low fever.

Spasm (spazm). A convulsive muscular contraction

Spasmodic (spaz-mod'ik) Sudden; violent, over-strained; unnatural

Specific (spe-sif'ik) Peculiar; special. A remedy of peculiar value.

Spectrum (spek'trum). A color-band from a ray of decomposed light

Speculum (spek'u-lum) An instrument for dilating and keeping open certain parts of the body to facilitate examination

Spermaceti (sper-mak'se-te). A fatty substance from the head of the sperm whale used as an emollient.

Sphincter (sfingk'ter). A muscle constructing an orifice.

Spinal (spi'nal). Of or pertaining to the backbone.

Spinous (spi'nus). Pertaining to the spine.

Spontaneous (spon-ta'ne-us). Taking place without aid or volition.

Sporadic (spo-rad'ik). Occurring singly or apart from other things of the same kind; separate.

Sputum (spu'tum). Expectorated matter. Spittle.

Squamous (skwa'mus). Covered with or consisting of scales.

Stagnation (stag-na'shun). Cessation of motion.

Stearin (ste'ar-in). A compound of stearic acid and glyceryl found in the harder animal fats.

Stench (stench). An ill smell; an offensive odor.

Stercoraceous (ster-ko-ra'shus). Having the nature of feces

Sterility (ster-il'i-te). The condition of being barren.

Sterilization (ster-il-iz-a'shun). The destruction of germs

Sternum (ster'num). The flat bone of the breast.

Stertorous (ster'tor-us). Breathing with a sonorous sound

Stethoscope (steth'o-skope). A tube for conveying sounds in auscultation

Sthenic (sthen'ik). Strong, active.

Stiff-neck (stif-nek). See torticollis.

Stigmatism (stig'ma-tizm). A condition of the refractive media of the eye in which rays of light from a point are accurately brought to a focus on the retina

Stimulant (stim'u-lant). Anything which stimulates

Stimulate (stim'u-late). To excite the organic action of. Incite; urge, instigate

Stimulus (stim'u-lus). Anything exciting an organ.

Stomach (stum'ak). The chief digestive organ of the body.

Stomachic (sto-mak'ik). A stimulant to the stomach.

Stomatitis (stom-a-ti'tis). Inflammation of the mouth.

Stool (stul). A discharge from the bowels.

Strabismus (stra-bis'mus). A condition in which the visual axes fail to meet at the objective point from inco-ordination of the eye-muscles; squint

Strangulation (stran-gu-la'shun). A choking or throttling.

Strangury (stran'gu-re). A painful discharge of urine

Strata (strat'ah). Plural of stratum.

Stratum (stra'tum) A layer of lamina.

Stricture (strik'tur). The morbid contraction of a passage of the body

Stroma (stro'mah). The foundation tissue of an organ.

Strumous (stru'mus) Scrofulus.

Strychnia (strik'ni-ah). An alkaloid of nux vomica.

Stupor (stu'por) The condition of insensibility

Styloid (sti'loid). Resembling a stylus.

Stylomastoid (sti-lo-mas'toid). Pertaining to the styloid and mastoid processes.

Stylus (sti'lus). A sound.

Stype (stip) A cotton tampon.

Styptic (stip'tik). Having the property of checking hemorrhage. A medicine that causes vascular contraction of the bloodvessels

Subacid (sub-as'id). Slightly acid.

Subclavian (sub-kla've-an). Under the collarbone.

Subcutaneous (sub-ku-ta'ne-us). Under the skin.

Sublimate (sub'li-mate). The product of sublimation.

Sublimation (sub-li-ma'shun). Vaporization and recondensation.

Sublingual (sub-lin'gwal). Beneath the tongue.

Submaxillary (sub-maks'il-a-re.) Beneath the inferior maxilla.

Subnormal (sub-nor'mal). Below the normal.

Subordination (sub-or-di-na'shun). Under control.

Subsultus (sub-sul'tus). Any morbid tremor or twitching.

Sudamina (su-dam'i-nah). Minute transparent vesicles arising on the skin toward the favorable termination of various diseases which have been attended by perspiration.

Sudoriferous (su-dor-if'er-us). Carrying sweat.

Sudorific (su-dor-if'ik). A medicine which produces sweat.

Suffocation (suf-fo-ka'shun). A stoppage of respiration.

Sulphate (sul'fate). A salt of sulphuric acid.

Sulphid (sul'fid) A combination of sulphur with an element.

Sulphurated (sul'fu-ra-ted). Combined with sulphur.

Superficial (su-per-fish'al). Confined to the surface.

Supernatural (su-per-nat'u-ral). Above the power of natural laws.

Supervene (su-per-vene'). To come upon as something extraneous; to be added to.

Suppository (sup-poz'i-to-re). A solid medicine melting at body temperature for introduction into the rectum or the vagina

Suppression (sup-presh'un). Concealment, retention.

Suppurate (sup'pu-rate). To generate pus.

Suppuration (sup-pu-ra'shun). The formation of pus

Surgery (sur'jer-e). Branch of treatment by operative procedures.

Susceptible (sus-sep'ti-ble). Sensitive to an influence; liable to become affected with a disease.

Suture (su'ture). Junction of cranial bones In surgery, a stitch.

Symmetry (sim-me-tre) A harmonious correspondence of parts.

Sympathetic (sim-pa-thet'ik). Reciprocal action by different parts of the body.

Symptom (simp'tum). Any affection which accompanies disease. A perceptible change in the body or its functions

Symptomatic (simp-to-mat'ik). Pertaining to a symptom.

Synchronous (sin'kro-nus). Occurring at the same time.

Syncope (sin'ko-pe). Swooning or fainting, a temporary suspension of respiration and circulation.

Syphilis (sif'il-is). A chronic, infectious venereal disease, which may also be hereditary.

Syphilitic (sif-i-lit'ik). Pertaining to or infected with syphilis.

Syphon (si'fon). A tube or pipe.

Syrup (sir'up). A concentrated solution of sugar in an aqueous fluid.

System (sis'tem) Methodic arrangement of parts. The animal economy.

Systole (sis'to le). The contraction of the heart and arteries.

Taenia Solium (te'ne-ah so'le-um). The common long tapeworm.

Taint (taint). An infection; spot; blemish.

Tampon (tam'pon). A plug of lint or cotton, etc.

Tartar (tar'tar). A deposit incrusting the teeth, composed chiefly of phosphate of calcium.

Teichopsia (ti-kop'se-ah). Temporary dullness of sight with subjective images, often an accompaniment of migraine.

Temple (tem'ple). Flat, depressed portion of the head between the eye and the ear.

Temporal (tem'po-ral). Pertaining to the temple.

Temporalis (tem-po-ra'lis). The temporal muscle.

Tenacious (te-na'shus). Adhesive; tough.

Tepid (tep'id). About blood heat.

Teratism (ter'a-tism). An anomaly of conformation, whether congenital or acquired, a monstrosity.

Tetanic (te-tan'ik). A medicine which acts on the nerves and through them on the muscles.

Tetanus (tet'a-nus). A disease with spasmodic and continuous contraction of the muscles.

Textural (teks'tur-al) Pertaining to any tissue.

Thalamus (thal'a-mus). A mass of gray matter at the base of the brain projecting into and bounding the third ventricle.

Thein (the'in). Active principle of tea, same as caffein.

Theobroma (the-o-bro'mah). A genus of trees. The seeds of theobroma-cacas furnish chocolate and cocoa

Therapeutics (ther-a-pu'tiks) That branch of medical science which relates to the discovery and application of remedies for diseases.

Thoracic (tho-ras'ik). Pertaining to the chest.

Thorax (tho'raks) The bones of the chest

Thrombus (throm'bus) A blood clot in a vessel at the point of obstruction.

Thyme (time). See thymus

Thymus (thi'mus). A genus of labiate plants. A granular organ in the anterior superior mediastinum, usually disappearing in adult life.

Thyroid (thi'roid). Scutiform, shield-shaped.

Tincture (tink'tur). Spirits containing medicinal substances in solution.

Tissue (tish'u). An aggregation of similar cells and fibers forming a distinct structure

Tonic (ton'ik) A medicine which tends to restore normal tone.

Tonsils (ton'sils). The glands in the sides of the throat

Torpid (tor'pid). Having lost motion or the power of exertion and feeling; dull; sluggish

Torpor (tor'por) Abnormal inactivity.

Torsion (tor'shon). The act of twisting.

Torticollis (tor-ti-kol'lis). Contraction of cervical muscles with bending of head

Tourniquet (toor'ni-ket). An instrument to compress arteries.

Toxin (toks'ine) A poisonous albumin produced by bacterial action.

Trachea (tra'ke-ah) The wind-pipe.

Tracheotomy (tra-ke-ot'o me) The operation of making an opening into the wind-pipe, as in cases of suffocation

Trachoma (tra-ko'mah) Granular lids, a form of conjunctivitis

Transection (tran-sek'shun) A cross-section

Translucent (trans-lu'sent) Partly transparent

Transpiration (tran-spi-ra'shun) The act or process of transpiring

Transudate (trans'u date) A substance resulting from transudation

Transudation (trans-u-da'shun). An oozing of a fluid through a membrane, especially a serum through vessel walls.

Transude (tran-sued'). To pass through the pores.

Transverse (trans-vers'). Lying across.

Traumatic (traw-mat'ik) A medicine useful in the cure of wounds.

Traumatism (traw'ma-tizm). The condition of one suffering from injury.

Tremor (trem'or). An involuntary trembling.

Triturate (trit'u-rate). To bruise. To rub or grind to a powder.

Tubercle (tu'ber-kl). A small eminence. A small nodule of granular cells constituting the specific lesion of the tubercle bacillus.

Tuberculosis (tu-ber-ku-lo'sis). An infectious disease due to a specific bacillus, characterized by the formation of tubercles.

Tumefaction (tu-me-fak'shun). A swelling of a part.

Turbidity (tur-bid'i-te). The condition of being troubled or disturbed.

Turpentine (tur'pen-tine). A substance taken from the pine tree. It is antiseptic and stimulant.

Tympanic (tim-pan'ik). Pertaining to the tympanum.

Tympanum (tim'pa-num). The drum of the ear.

Typhlitis (tif-li'tis). Inflammation of the cecum

Typhoid (ti'foid) A condition of great muscular weakness.

Typhus (ti'fus). A contagious fever.

Typical (tip'ik-al). Characteristic

Tyrotoxicon (ti-ro-toks'i-kon). A ptomaine from decomposed milk and cheese

Ulcer (ul'ser). Suppuration upon a free surface; an open sore.

Ulcerate (ul'ser-ate). To produce an ulcer.

Ulceration (ul-ser-a'shun). The process of ulcer-formation

Ulcerous (ul'ser-us). Having the character of an ulcer.

Ulna (ul'nah). The large bone of the forearm.

Ulnar (ul'nar). Pertaining to the ulna

Umbilicated (um-bil'i-ka-ted). Having a depression like the navel

Umbilicus (um-bi-li'kus). The navel; the round depressed cicatrix in median line of abdomen

Unction (ungk'shun). The act of anointing. an ointment.

Unctuous (unk'shus). Greasy.

Unguentum (un-gwent'um). An ointment; a soft, fatty medicated mixture.

Unilateral (u-ne-lat'er-al). Affecting but one side.

Urate (u'rate). A combination of uric acid with a base.

Urea (u're-ah). An animal substance found in urine.

Uremia (u-re'mi-ah). The symptoms due to a tonic condition of the blood from accumulation of substances normally excreted by the kidneys.

Uremic (u're-mik). Due to or marked by uremia.

Ureter (u-re'ter). The excretory duct of the kidneys

Urethra (u-re'thra). The excretory canal of the bladder.

Urethral (u-re'thral). Pertaining to the urethra

Urethritis (u-re-thri'tis). Inflammation of the urethra.

Uric Acid (u'rik a'sid). The acid contained in the urine.

Urinary (u'ri-na-re). Of or pertaining to urine or the organs which secrete it

Urine (u'rin). The excretion of the kidneys.

Urinemia (u-ri-ne'mi-ah). The presence of urinary constituents in the blood.

Uriniferous (u-ri-nif'er-ous). Producing and carrying urine.

Urticaria (ur-ti-ka'ri-ah). Nettle-rash; a skin eruption with itching lasting only a short time

Uterine (u'ter-in). Pertaing to the uterus.

Uterus (u'te-rus). The womb; the hollow female organ of gestation.

Uvula (u-vu-la). The soft part of the palate.

Vaccination (vak-si-na'shun). Inoculation with vaccine to protect against small-pox.

Vaccine (vak'sine). Any substance containing the virus of cow-pox.

Vagina (va je'nah). The canal from the vulva to the uterus.

Valerian (va-le're-an.) A plant of the genus valeriana

Valeriana (va-le-re-a'nah). A genus of plants; also the rhizome and rootlets of valeriana officinalis, it is an antispasmodic and stimulant

Valerianate (val-e're-an-ate). A salt of valerianic acid.

Varicose (var'i-kos). Swollen; knotted.

Varioloid (var'e-o-loid) The slight form of small-pox as modified by vaccination

Vascular (vas'ku-lar). Pertaining to vessels.

Venesection (ve-ne-sek'shun). The opening of a vein for the purpose of letting blood.

Venous (ve'nus). Pertaining to a vein

Ventilation (ven-ti-la'shun). The supplying of fresh air.

Ventral (ven'tral). Belonging to the belly.

Ventricle (ven'trik-l). A small belly like cavity.

Verbascum (ver-bas'kum). A genus of plants.

Vermicular (ver-mik'u-lar) Worm-like.

Vermiform Appendix (ver'mi-form ap-pen'diks). A worm-shaped tube opening into the cecum.

Vermifuge (ver'mi-fuj). An agent expelling intestinal worms.

Vertebra (ver'te-bra). A bone of the spinal column.

Vertigo (ver'ti-go). Giddiness; dizziness.

Vesicant (ves'i-kant). A blistering application or plaster.

Vesication (ves-i-ka'shun). The production of a blister.

Vesicle (ves'i-kl) A small blister or sac.

Vesicular (ve-sik'u-lar). Having vesicles.

Vesiculation (ve-sik-u-la'shun). The formation of vesicles.

Veterinary (vet'er-i-na-re). Pertaining to the art of healing or treating the diseases of domestic animals.

Vibration (vi-bra'shun). A swinging back and forth or rapidly repeated oscillatory movement.

Vicarious (vi-ka're-us). Taking the place of another. The assumption of the function of one organ by another.

Vidian Artery (vid'i-an ar'ter-e). A branch of the internal maxillary artery which passes through the vidian canal and is distributed to the pharynx and Eustachian tube.

Virile (vir'il) Pertaining to a man as distinguished from a woman.

Virulence (vir'u-lence). Noxiousness; malignity; injurious to life.

Virulent (vir'u-lent). Having the nature of poison.

Virus (vi'rus). Contagious poisonous matter, especially that produced by and capable of transmitting a disease.

Viscera (vis'se-ra). The contents of the body cavities.

Visceral (vis'sur-al). Pertaining to the viscera; that cavity of the body which contains the viscera.

Viscid (vis'sid). Sticky; having a thick or sticky consistency.

Viscus (vis'kus). Any organ inclosed within the cranium, thorax, abdominal cavity or pelvis

Vision (vizh'un). Sight.

Visionary (vi'zhun-a-re). Imaginary; unreal; fantastic, fanciful, dreamy; whimsical.

Visual (viz'u-al). Pertaining to vision.

Vita (vi'tah). Life.

Vital (vi'tal). Pertaining to life.

Vitalism **(vi'tal-izm). The theory that bodily functions are due to a distinct vital principle.**

Vitality (vi-tal'i-te). The vital principle of life.

Vitals (vi'talz). The organs essential to life.

Vitiate (vish'e-ate). To render vicious, faulty, defective or impure.

Vivacity (vi-vas'i-te). Natural vigor. Power of living; longevity.

Vivisection (viv-i-sek'shun). Scientific dissection of or experimentation upon living animals.

Void **(void). To emit; to send out; to evacuate.**

Volatile (vol'a-til). Having the quality of passing off by spontaneous evaporation.

Voluptuous (vo-lup'tu-us). Given to the enjoyment of luxury and pleasure. Indulging to excess in sensual gratifications.

Voracious (vo-ra'shus). Having an insatiable appetite.

Vulva (vul'vah). The external female genitals.

GENERAL ARRANGEMENT

This work is divided into twenty Books, which in their turn are subdivided into chapters or parts.

At the back of the whole work will be found a complete General Index of all matters contained in the different Books and their subdivisions, so that any disease or any remedy in any part of the work may be quickly located. But, in addition to this General Index, each chapter or part is prefixed with a special index of its own, thus giving immediate location of items to be consulted in the special subject at the time under consideration. For example, let us take the common disease Asthma. On consulting the General Index we find the main article to be on page 523. Turning to the index at the beginning of this chapter (Part VI of Book IV) we may find the causes, symptoms and varieties of Asthma.

If what we wish is not found in this general article, we again refer to the General Index; and we have special treatments of the disease in other parts of the work, such as Simple Remedies, Prescriptions, Homeopathic Treatment, Exercises, etc. This plan has been carried out all through the work.

IMPORTANT

READ CAREFULLY

ATTENTION is directed to the fact that all through this book the doses mentioned are for ADULTS, except where the treatment is specifically for a child.

PLEASE NOTE particularly the footnote on pages 1233 to 1248 inclusive.

Also note full directions given on pages 1224 and 1719, to determine doses for children.

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